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ABSTRACT

The volume consists of all of the major presentations at three institutes for curriculum personnel development held to serve participants from all parts of the nation. From one to four presentations are included for each of twelve topics: (1) Role of the Federal Government in curriculum development; (2) Overview of curriculum development and career education; (3) Curriculum design; (4) Curriculum objectives; (5) Programs for disadvantaged; (6) Issues and problems relative to accountability; (7) Bases for curriculum decisions; (8) Adoption of curriculum; (9) Curriculum validation; (10) Personnel development; (11) Curriculum research; (12) Plans and priorities for curriculum development. (For an abridged version of this volume, see CE 001 403). (AJ)

FINAL REPORT

PROJECT NUMBER V 2570 15

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TRAINING INSTITUTES FOR CURRICULUM PERSONNEL DEVELOPMENT

FOR INTEGRATION OF INNOVATIVE CONCEPTS AND NEW DEVELOPMENTS

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June, 1973

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Office of Education
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VOLUME II
(Formal Presentations)
(Appendix G)

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U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Office of Education
Bureau of Research

VOLUME II
(Formal Presentations)
(Appendix G)

FOREWORD

Volume II (Section G of the appendixes) consists of all of the major presentations at the Institute for Curriculum Personnel Development conducted by the Department of Vocational Education of Colorado State University under a grant from the United States Office of Education during fiscal year 1973. The entire report (including this section) is pursuant to completion of that contract.

Three separate institutes were held to serve participants from all parts of the nation. The locations were: Fort Collins, Colorado (October 23-27, 1972); Washington, D.C. (November 13-17, 1972); and Auburn, Alabama (February 5-9, 1973).

In general, each consultant gave a presentation(s) at each of the institutes, thus only one paper is included for the topic discussed. When a different consultant served at another institute, this presentation is also included in this volume. The reader should consult Volume I, Section D of the appendixes of this report as to the actual location at which a particular consultant made the presentation.

Special thanks is extended to Dr. Elizabeth Simpson, Director of the National Curriculum Center for Occupational Education, and Mr. Bill Berndt, Program Specialist, Curriculum Center for Occupational and Adult Education for their capable assistance in the implementation and completion of this project.

In addition special recognition is given to Ida Lou Delehoy, Secretary; Patricia Hemby, Secretary; and Ralph H. Green, Research Associate for their attention to details of conducting the institutes, and data collection, analysis and assistance in the preparation of the final report.

It is the hope of the institute Co-Directors that the compilation of these presentations as a separate volume will assist those seeking further study and resource material related to the development of personnel and programs to improve Vocational Education and Career Education.

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TABLE OF CONTENTS

FOREWORD. iii

ROLE OF THE FEDERAL GOVERNMENT IN CURRICULUM DEVELOPMENT. . 1

"Role of the Curriculum Center in U.S.O.E.," Elizabeth Simpson 3

"Institute Overview," William Berndt. 8

OVERVIEW OF CURRICULUM DEVELOPMENT AND CAREER EDUCATION . . 13

"Curriculum Development for Career Education," Byrl R. Shoemaker 15

"Overview of Curriculum Development Needs for Vocational and Career Education," E. L. Kurth . . . 40

"Career Education: Concept and Curriculum," Duane J. Mattheis 51

"Analyzing Occupations With Implications for Learning," Leon Lewis 59

CURRICULUM DESIGN 67

"Approaches to Vocational Education Curriculum," Patrick J. Weagraff 69

"Exploring Curriculum Tasks and Guidelines in Relation to Career Education," Henry J. Hermanowicz. 82

CURRICULUM OBJECTIVES 93

"Developing Hierarchies of Objectives for Vocational Education Curriculum and Management," Patrick J. Weagraff 95

TABLE OF CONTENTS (Continued)

PROGRAMS FOR DISADVANTAGED 113

"Problems and Issues Identified With Developing Curriculum for Inner-city Youth and Adults," Harry Huffman. 115

"Curriculum Problems - Inner-city Youth and Adults," Cleveland Dennard 124

"Problems and Issues Identified With Development of Curriculum for inner-city Youths and Adults," Lawrence Davenport 131

ISSUES AND PROBLEMS RELATIVE TO ACCOUNTABILITY 141

"Accountability in Higher Education," A. R. Chamberlain. 143

"The Issues About Objectives," Robert E. Stake . . 151

"Accountability in Relation to Vocational Planning," Roman C. Pucinski 153

BASES FOR CURRICULUM DECISIONS 161

"Social Aspects and Considerations of Career Education," L. Sunny Hansen. 163

"The Career Development Program," W. Wesley Tennyson, Mary Klaurens and Lorraine S. Hansen 180

"Value Bases for Curriculum Decisions," Jack Conrad Willers. 198

ADAPTION OF CURRICULUM 211

"Adapting Curriculums to Local Needs," James E. Wall. 213

TABLE OF CONTENTS (Continued)

CURRICULUM VALIDATION 249

"Validation of Curriculum in Vocational-Technical Education," James E. Wall 251

PERSONNEL DEVELOPMENT 285

"Development of Professional Staff in Curriculum Functions," Frank H. Wimer. 287

CURRICULUM RESEARCH 319

"Federal Perspectives on R&D in Vocational Education," Howard F. Hjelm 321

PLANS AND PRIORITIES FOR CURRICULUM DEVELOPMENT 329

"Occupational and Adult Education: Priorities and Challenges," William F. Pierce. 331

ROLE OF THE FEDERAL GOVERNMENT IN CURRICULUM DEVELOPMENT

ROLE OF THE CURRICULUM CENTER IN U.S.O.E.

by
Elizabeth Simpson*

The Curriculum Center for Occupational and Adult Education in the Bureau of Adult, Vocational, and Technical Education has been in existence for something less than a year. The Center was instituted at the bureau level in order to provide for coordination of curriculum development and management efforts across division lines and to address national concerns in curriculum development and management in vocational-technical and career education, the latter in cooperation with other units of the Office of Education having career education as a priority.

Members of the curriculum center staff include specialists in curriculum development, collection and dissemination, teacher and leadership education, and career development guidance and placement. A specialist in Manpower Education Curriculum Development was assigned to the Center for 90 days and continues working in close association with Center staff. Close liaison with curriculum development efforts in adult education is maintained.

As the new Bureau of Occupational and Adult Education comes into being, headed by Deputy Commissioner William Pierce who will be meeting with you on Thursday, some reorganization will take place. The Curriculum Center will become a branch in a Division of Vocational Education Research. Its mission and objectives will remain essentially as they are now. The new division will bring together the research, development, and demonstration efforts in vocational-technical and related career education. Such coordination should make possible more significant impact on major problems of our field.

The role of the Curriculum Center (or branch) is more than that of a dispenser of grant and contract awards. However, grant and contract awards is part of this unit's business. A number of projects funded under Part I, Curriculum Development, Vocational Amendments of 1968, are coming to completion and resulting products will be made available to the field. For example: eleven products of curriculum development projects funded in FY 1970 under Part I-Vocational Education Curriculum Development, are to become available in approximately the next six months. The printing and dissemination of the eleven curriculum related products are being carried out through five curriculum laboratory projects which were funded in FY 1972.

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*Elizabeth Simpson, Director, National Curriculum Center for Occupational and Adult Education, BAVTE, U. S. Office of Education, Washington, D.C.

Each of the five curriculum laboratories will be responsible for the printing and dissemination of one to three of the products. A quantity distribution of each will be made to each State vocational and technical education department. After this dissemination, copies will be available for purchase only from the Superintendent of Documents.

The following publications will be printed and disseminated:

CURRICULUM GUIDES - 2 year Post-High School

Library Technical Assistant
Air Pollution Technology
Social Services
Teacher Aide
Medical Radiologic Technology
Veterinary Science Technology
Law Enforcement
Educational Media Technology

MISCELLANEOUS MATERIALS

State Instructional Materials (7 annotated listings)
  -Agriculture
  -Distributive Education
  -Health Occupations
  -Home Economics
  -Office Occupations
  -Technical Education
  -Trade and Industrial

Organizing Consumer and Homemaking Programs for Out-of-School Youth and Adults
Administration of Occupational Education

Information can be obtained as to availability of these publications after April 1, 1973. Contact the:

Curriculum Center for Occupational and Adult Education
Bureau of Adult, Vocational, and Technical Education
U. S. Office of Education.

In Fiscal '71, major curriculum projects funded were concerned with curriculum development in the following occupational clusters: transportation, communications and media, construction, manufacturing, public services, and recreation and tourism. Continuation funding of these projects in '73 will make possible further development and field testing before the curriculum guides are made available generally.

In fiscal '72, 33 projects were funded. You will be provided with lists of these projects, which are categorized as follows: curriculum management, bases for curriculum decisions, occupational education curricula, general career education, groups with special needs, and consumer education. Perhaps you were among those who heard progress reports of most of these projects during the AVA Convention in Chicago in December. We are now in a funding period in fiscal '73. Decisions regarding what to fund have been made but the amount of paper work, review, and just plain bird-dogging to achieve closure on '73 funding is tremendous.

One of the major goals of the Curriculum Center has been to develop a more coordinated approach to curriculum development and management at the national level and to encourage coordination at State and regional levels. In this regard, five State curriculum laboratories have been funded for an 18-month period to improve their capabilities as curriculum management centers and to re-orient their efforts toward career education. Proposals from 32 states were received, and, after careful review of these, the five funded were: Oklahoma, Mississippi, Kentucky, Illinois, and California. These States are now meeting with neighboring States for the purpose of coordinating and regionalizing their efforts. The results should be improved decision making with respect to needs and assignment of responsibility, less duplication of effort, and improved dissemination.

The Curriculum Center has a role in determining areas of need for curriculum development in vocational-technical education. One objective has been not only to support the development of curricula in the occupational cluster areas and the updating of curricula in more traditional areas, but also to move into areas on the cutting edge: curricula for new and emerging occupational fields such as nuclear medical and electro-mechanical technology; curricula related to the special needs of such groups as blue collar workers, gifted and talented, handicapped, etc.; and curriculum adaptations for media for home study, such as CATV (community antenna television) audio-video cassettes. With respect to new areas of interest, an excellent proposal for a toy-games curriculum has been received.

Having specialists in teacher and leadership education and career development and guidance in the Center means that we are constantly made aware of the importance of every curriculum effort having teacher education and guidance components. In fact, a policy with respect to funded curriculum development projects is that they should have teacher education and guidance components.

Early on, when curriculum center staff constituted a task force, rather than a center staff, the following national problems related to curriculum development and management were identified. The center branch is committed to addressing these problems:

1. There is no comprehensive state-of-the-art study of curriculum development in vocational-technical and career education.

   There are now some bits and pieces for example, career education of Indiana and those in correctional institutions, DE and career education. Every major curriculum development project begins with a state of the art study.

2. Much work in curriculum development is in progress, but efforts are spotty and uncoordinated. There is much duplication in some areas whereas others are virtually ignored. There has been a tendency to give less attention to those that do not fit easily into traditional vocational education categories.

3. Little attention has been given the relative effectiveness to the various procedures and products of curriculum development in vocational-technical and career education.

   (A variety of patterns of development and testing curricula - no study of cost effectiveness of the method.)

4. There has been insufficient attention to the bases for curriculum decisions.

   Most of our curriculum development in vocational-technical education has been in a very linear mode. There has been little attention to social condition and needs and value considerations as related to curriculum decisions. Our Wednesday sessions at this institute are related to this problem.

5. Many curriculum materials in use have not been validated through rigorous testing.

6. In general, curriculum development does not reflect the continued advances that are being made in educational media and technology.

7. There are vast curriculum needs of special groups. For example: curriculum materials do not reflect cultural values of minorities.

8. Frequently, major weakness has been failure to disseminate and to provide for effective use of curriculum materials.

9. Increasing geographic mobility of persons in the labor force seems to indicate the necessity for emphasis on standardization of certain types of curricular content; certainly an emphasis on adaptibility is needed. But, among some educators, there is still a feeling that all curriculum development must be done at the local level.

10. There is no provision for a systematic and continuous review and updating of curricula.

In this brief presentation, I have tried to touch on some highlights of the curriculum unit's role and responsibility. The Curriculum Center(branch)is in the Office of Education to serve national needs in the area of curriculum development and management in vocational-technical education and that in the context of career education. We are making every effort to coordinate our work with that of States, regions, other agencies of government, and professional organizations. We solicit your help in these efforts and your suggestions for improvement of our operation.

INSTITUTE OVERVIEW

by
William Berndt*

Thank you, Dr. Larson. Let me welcome you to this week-long institute for Curriculum Personnel Development. I am responsible, as you may know, for monitoring this project. This is one of the many projects that we in the center have to monitor. Dr. Simpson and I will share this monitoring time as we alternate our attendance here during the week. We do ask each of you, if you have any problems or issues in regard to the sessions, to offer suggestions that will assist us in conducting this Institute and the Institute which follows in February at Auburn, Alabama.

The Office of Education has, in previous years, done considerable to extend both manpower and funds toward curriculum development. However, much of what has happened occurred in curriculum conferences, workshops, and the like. Five were held during the period of 1967 and 1970. These five different workshops were funded by research funds. Another one we funded directly in-house in the Division of Vocational-Technical Education with what we call S and E funds or salary and expense funds. There also has been some EPDA money used for one of these conferences.

The first one of these five that was held was the National Curriculum Materials Clinic that was held in Kansas City in January, 1967. My intention here is to illustrate that the center has tried to do something in the area of curriculum development. Prior to these five conferences sponsored by the Office of Education: the National Leadership Conferences, the Conferences for State Directors, the Conferences for Teacher Educators, all had as part of their programs some emphasis on curriculum development, although the entire conferences were not curriculum related until the five I have mentioned previously. Unique to the Kansas City conference it was the first time all of the vocational services got together and talked curriculum.

A research project was funded with Penn State University in July of 1968 in which they held two Institutes on Innovative Curricula. The research people had funded a variety of projects. At these two institutes they communicated concepts and procedures of these projects, such as Project, Quincy, Massachusetts, and others on which they had done much work. Another institute was held at Virginia State College in August of 1969 and was titled "Design and Modification of Curriculum Materials." The next institute was Leadership Development in Curriculum Planning which was held in Kentucky and funded with EPDA funds. Fourteen states participated in this conference with each state developing a curriculum leadership development plan for their state, then on returning home to put that plan into effect.

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*William Berndt, Program Specialist, Curriculum Center for Occupational and Adult Education, U.S. Office of Education, Washington, D.C. 20202.

The fourth conference was the National Conference on Curriculum Development which was held in Dallas in March of 1969. This was one of nine other conferences which came-out of the thrust of the 1968 Amendments for Vocational Education. It was conducted on a project basis by UCLA and funds for this came from evaluation dollars. Each of these ten conferences was then incorporated into regional conferences with the purpose to study the sections of the Act that related to curriculum development, to develop guidelines for interpretation and action for the six-purposes that are spelled out in Part I of the Act, and to answer questions as to who, what, why, where, when, and how with regards to curriculum development. As a result of this conference, a guide for Development of Curriculum in Vocational and Technical Education was developed and several of you should have received a copy of this several years ago. Twenty thousand copies of this guide were distributed through the regional offices to the State Departments of Education. Copies of the document are not now available in our office, and if the regional offices did not distribute them, perhaps they are still available from them or the state departments.

If all of the issues and problems cited in this document were solved, we would have no need for this meeting this week. Obviously, they are not solved. A lot of suggestions for the resolution of the problems are cited, and if you have an interest in curriculum, you should read this report again. One of the purposes cited in this document is the training of curriculum personnel. This is what we are trying to address ourselves to today. We are trying to be responsive to that sub-purpose spelled out in the Act; but, overriding that is the fact that there is a great need for developing, updating, and improving the curriculum. It can only be done through the training of people.

As I mentioned previously, Part I contains six sub-purposes and the specific one that relates to this institute is the training of curriculum personnel. As you well know, we did not receive curriculum funds under the Act until fiscal 1970. We attempted, both that first year and the second year of funding, to address ourselves to this issue and the problem of improving curriculum through the training of curriculum personnel. However, we were unsuccessful in each of the two years to do what we desired and intended. As of last year, in fiscal year 1972, we did get this one project underway.

Let's take the issue at hand - this training institute. Three of these institutes are being sponsored under one project. The project is with the Colorado State University. Project co-directors are Dr. Larson and Dr. Valentine, whom you no doubt have had contact with through the past few weeks. This project is supported with our Part I curriculum funds. The three institutes are the one that was held in Fort Collins, this one here (Washington) and the third one at Auburn, Alabama, in February of 1973. The three were setup to cover all three sections of the country. Fort Collins covered the western part of the United States, this one covers the entire eastern seaboard and midwest and the third conference will cover the southern half of the country. In keeping with the Act and Amendments of 1968, this institute is intended to assist you to meet the needs of curriculum development as we see them.

Now, let's take a look at how this program was developed. We want your feedback as to whether it meets your needs. This group is diverse and it won't meet everyone's needs to the same extent, but do let us know your feelings about the institute as it develops. A project advisory committee was formed with eight individuals from eight states. These eight persons represented teacher education, state directors, curriculum labs, and the Ohio Center. In addition to that, Dr. Simpson and I participated in this advisory group as well as the two project co-directors. We had a day long meeting in which this program was planned and many contacts thereafter resulting in revision and redirection. One of the items spelled out was who should participate in these conferences. First of all, the meetings are directly for curriculum personnel now in vocational and technical education, second, for those in teacher education in vocational and technical education, and a third category was other. At each of these institutes we are trying to include eighty people. About 150 persons were suggested for each of these institutes with suggestions originating with the state directors. If they provided the proper information, then those of you here are the ones that can benefit most of all.

In addition to participants being from the two categories that I mentioned, it is also designed for our central office staff here in Washington and for our regional people. Hopefully you will meet some of them this week as they will be working right with you in upgrading their capabilities.

Curriculum development personnel require many multiple competencies. Let me enumerate briefly some of them. This is not an exhaustive listing, but these are important to possess in order to do a good job of curriculum development. These are as follows:

1. Be able to organize and coordinate the work of a team
2. Have knowledge of the various theories that relate to curriculum development, have the ability to analyze those theories and adapt them for use in vocational and technical education
3. Have the capabilities for diagnosing the present and projected needs of the learner
4. Have the ability to make competent judgements as to the validity and the importance of content material
5. Have a comprehensive understanding of sociological and psychological principles of learning
6. Have the ability to develop objectives in behavioral terms
7. Have the capability to organize content and learning processes into a sequential activity
8. Have the ability to develop procedures for measuring the learner's progress
9. Have the ability to translate objectives and instructional procedures into plans for curriculum materials and facilities
10. Have the ability to design and conduct programs which will assist in testing and evaluating curriculum materials
11. Have the acumen and acquaintance with the dynamics of the social and political action in order to implement change in curriculum.

How many of these competencies do each of us have? How many do we need to sharpen up and/or develop further? I am certain the individual does not exist that has high competency in all of these I have enumerated, and this is not an exhaustive list. The broad purposes of these institutes are to:

1. Update key personnel in the concepts, techniques, and methodologies of the total curriculum building process
2. Relate the curriculum building process to the implications of career education.

The project staff, when I finish this morning, will be zeroing upon, more specifically, the intent of the Institute and the specific agenda items on the program that are designed to meet these overall broad purposes. Hopefully, as far as the Curriculum Center is concerned, we expect some impact resulting from your attendance at this institute. First of all, it should upgrade the personnel here in attendance to varying degrees, depending on your background and skill in this field. There should be an improvement in the multiple competencies that are required. It should result in better coordination of the competencies and their relationship for an improve curriculum. The curriculum that meets persons' needs more effectively will be designed, hopefully as a result of all of this, rather than what the school needs. I am emphasizing the individual's needs over the school's needs.

We cannot justify the time involved, unless we can get a multiplier effect from this institute. Unfortunately we had to limit this to eighty people at each of the three institutes, and it will not meet the needs of each state unless the benefits that you gain here are taken back and shared with your immediate staff or the group that you represent. Unless you do this after the session closes Friday, I don't think we can justify, at least on an accountability basis, the money that we have put into this training institute and the effort of the staff to come up with a viable program. So, I challenge you to take back what you have learned, share it with your own colleagues, both immediate and a broader group, so that we can have a better accountability reflected upon the curriculum development efforts in your state, or whatever group you are representing. Thank you kindly.

OVERVIEW OF CURRICULUM DEVELOPMENT AND CAREER EDUCATION

CURRICULUM DEVELOPMENT FOR CAREER EDUCATION

by
Byrl R. Shoemaker*

Our present system of education in the high school is based upon the concept that the purpose of high school is preparation for college. Thirty years of research has failed to prove that the present college preparatory program in high school is even the best way to prepare for college.[1] Such research, however, has not encouraged any significant changes in public education. As reported by Dr. Sidney P. Marland, Commissioner of the U. S. Office of Education, most of the young people in our public education secondary school program are enrolled in the general program. This general program leads only to general unemployment. No nation can compete in the modern world which thrusts millions of unskilled dropouts from high school and college (and graduates from "general programs") into a world crying for skilled workers in industry, business, distribution and public services.

The unemployment rate among our youth is approximately three times that of our normal adult population, despite the fact that these young people are stronger, taller, better nourished, more mature and more experienced than any preceding generation. Our concerns, however, are not only with the unemployed youth, but the massive number of youth that are underemployed in terms of the potential contributions to society and to themselves. The technological age demands skills and technical knowledge as a price for employment in a meaningful occupation.

Our public education system, which has reflected this massive societal influence toward professions, is now being impacted upon by theorists who talk about a workless society. There is no evidence that such a society can, will, or should exist. The "College only" attitude and the "workless society" concept undoubtedly have contributed much to the problem that we face. Youth cop out from a system that denies them recognition for any goal except a college degree, which will be achieved by perhaps 14 out of every 100 that enter the first grade. We have talked about equal education in our nation, but assumed equal education meant the opportunity for all to prepare for college. Such education is very unequal education; intellectual snobbery attempts to force young people into one educational mold.

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*Byrl R. Shoemaker, Director of Vocational Education, Department of Education, Columbus, Ohio.

[1] Studies dealing with the Relationship Between a Prescribed Pattern of High School Units for Entrance Requirements and Academic Success in College, Dr. Collins Burnett, Unpublished Monograph, Ohio State University, 1967.

Catch-up education may be necessary, as reflected in programs such as Adult Basic Education, National Alliance for Businessmen, Manpower programs, and WIN programs. Such programs, however, offer no solutions to the dilemma which we face in America. The future of America rests in the future of the youth and the future for most youth rests in preparation for jobs at the completion of high school. There is a need for a change in the total curriculum of the public school as well as for improved curriculum organization within the sections of thrusts in the school program.

CAREER EDUCATION

Career education has become a popular term, but in some sense it attempts to avoid the word "work." I have supported and applauded Dr. Marland's efforts to arouse the nation to the need of the masses of young people for preparation for work. The need is for a career continuum within the structure of public education to provide for work motivation, work orientation, work exploration, and work training through "survival" education under the leadership of the federal, state and local relationships present in vocational and technical education. There is a need for a massive change of parental attitudes, industrial attitudes, business attitudes and educational attitudes. We cannot afford a public educational system geared to serve the 14 percent of students who will complete college.

Within Ohio we have developed a career continuum as a total curriculum pattern to: guide youth to a point of career choice; provide preparation for entrance into employment; provide for retraining or upgrading instruction throughout a person's work life.

It is obvious that such a career continuum greatly complicates the process of curriculum development. Curriculum development for the career motivation, orientation and exploration is still in the development stages within our nation. Nationally the U. S. Office of Education is spending several million dollars to develop the curriculum processes and materials for six models throughout the nation. The process involves the development of materials and processes at the Center for Vocational Education and assistance from staff of the Center to the school districts involved in the model to integrate career development concepts into the curriculum.

Within Ohio we have followed the procedure of developing guidelines calling for:

1. The program to be centered within the curriculum,
2. The program to be provided by the existing teachers in the school,
3. An allocation of time within the curriculum,
4. Experience centered base for the career development program,
5. An allocation of funds for additional costs for the program.

A framework has been established for curriculum development for the total career motivation, orientation and exploration program as an aid for the inclusion of content and experiences within the curriculum at the various child development levels.

The units providing the framework are as follows:

1. Individual and his Environment,
2. World of Work,
3. Education and Training,
4. Economics,
5. Employability and Work Adjustment Skills,
6. Decision Making,
7. Self.

CAREER EDUCATION IN OHIO

Career education is defined as a program which endeavors, through the regular curriculum, to provide all youth in the school with motivation toward the world of work, orientation to the many job opportunities available, and exploration of occupations consistent with individual interests and abilities which help youth benefit from and plan for pre-professional instruction or vocational education. The career education program also provides preprofessional instruction leading to further education, vocational education leading to successful entry and advancement in an occupation of personal choice, and training, retraining and upgrading instruction throughout an individual's work life which is consistent with the technology of the world of work and the individual interests and the needs of out-of-school youth and adults.

The successful career education program combines the efforts of the home and the school to prepare youth for successful entry into the world of work. The school integrates the career motivation, orientation, and exploration program with the regular curriculum and includes a strong family-life program to develop the positive influence of the home to its fullest potential.

A total career education program consists of the following phases:

1. A total Family Life Program within the school curriculum with special emphasis for disadvantaged people to help improve the care and motivation of pre-school children and assure a more positive impact of the home on the needs of school age youth.

2. A Career Motivation Program for all youth in kindergarten through Grade six which develops a positive attitude toward the world of work, inspires respect for all work and creates a desire to be a part of the world of work.

3. A Career Orientation Program in grades seven and eight which provides all youth the opportunity to become aware of the many occupations open to those who prepare for them.

4. A Career Exploration Program in grades nine and ten, or age fourteen and fifteen, which provides all youth with the opportunity to examine and gain firsthand experiences with several career opportunities consistent with individual interests and ability.

5. An Occupational Work Adjustment (OWA) for drop out prone fourteen and fifteen year olds which uses work as an adjustment process to prove to them they are worth something and to encourage them to stay in school and make better choices of a vocational program at age sixteen.

6. A Career Preparation Program for youth age sixteen and above which includes:

    A. a comprehensive vocational education program which provides job skills and technical knowledge and develops work habits and attitudes in preparation for employment,

    B. a comprehensive pre-professional education program which provides knowledge and foundations in preparation for professional education beyond high school,

    C. an Occupational Work Experience (OWE) for drop out prone boys and girls sixteen years of age or older to prepare them for employment through a cooperative type program.

7. A Career Training, Retraining and Upgrading Program for out-of-school youth and adults which provides the opportunity throughout adulthood to train, retrain and upgrade skills as technology changes and societal and individual needs and desires dictate.

In accordance with our plan for inclusion of motivation, orientation and exploration within the curriculum of the existing teaching areas in Grades K-10, separate curricula are not prepared for each of the career areas. Teacher committees from operating programs, however, have prepared teacher guides to assist all teachers to incorporate career education in their curriculum on an organized basis.

Career education in grades K-10 is essential to a sound choice of a vocation or profession. It should be for all students. It is logically related to vocational education and becomes a part of a "career continuum." Concepts of curriculum organization for vocational education point to the wisdom of the addition of the K-10 program effort pointed towards careers. It is as significant a development as the early efforts in guidance as the necessity for vocational choice led to the development of the guidance programs.

It is believed that the principles of curriculum organization for vocational education have a relationship to the need for the expanded career continuum concept and provide leadership to curriculum development at that level.

Let me review in a little more detail a basis for and some concepts concerning curriculum development for vocational education. Perhaps these are applicable to any goal centered education program leading to employment, whether employment is as a vocational, technical or professional worker.

Vocational education cannot be classed as a unique discipline within the educational system of our country. Rather, it can be identified as a program in which we combine the skills and technical content of various disciplines with the practical requirements of the world of work in order to prepare a young person to succeed technically and socially in that world of work. Vocational education, while not unique as a discipline, is unique as a program and this uniqueness is reflected in facilities needed for the instructional program, equipment, instructor qualifications, student goals, and the curriculum provided for the instructional program. Within this listing of unique factors for vocational education, the student goals become paramount and serve as the basis for the development of the curriculum, facilities, and equipment. Also, instructor qualifications grow out of the curriculum plan.

This part of my presentation will focus on the area of curriculum and curriculum materials for the vocational phase of the total program. It would be possible to discuss these two items in great detail based on the mechanical process of curriculum organization for the various areas of vocational education since each would have a uniqueness in content which would make some differences in the pattern of organizing and reporting the curriculum process. While I propose to discuss some principles dealing with curriculum and curriculum materials in this paper, I believe it is extremely important to discuss some concepts and theories which serve as a basis for decisions about curriculum.

Many of our arguments over curriculum organization, curriculum material development and the amount of emphasis to be placed upon vocational education curriculums within the public education process grow out of differences in understanding or lack of understanding of principles in the learning theory or the educational process. Disagreements over curriculum often start in differences in opinion over:

1. Purpose of Education,
2. Learning Theory and Principles of Learning,
3. Attitude Towards Present Collegiate Preparatory Curriculum,
4. Scope of Curriculum,
5. Principles of Curriculum Organization.

I would suggest that a person will make a shallow approach to curriculum development unless a study is made of these factors and some principles of education developed. A paper of this type cannot adequately condense the many volumes that have been written on each of these topics but I would propose to make a brief summary of the importance of each of these factors.

PURPOSE OF EDUCATION

The overall purpose of education in any society might be stated: "To prepare people to adjust to and improve the society in which it exists." The educational process, therefore, is constantly affected by the society in which it exists and by the social and economic factors prevailing in that society. Early efforts in education, therefore, emphasized the importance of literacy and citizenship training, since a democratic society depends upon a literate, informed and concerned citizenry. As our society grew more affluent, more complex, free public education was extended upwards into the high school years. At the time the early high schools were organized, the large majority of the youth attending the high school did so as a preparation for attending college. Job skills other than the professions were learned through a pass-on procedure of father to son, through a process of apprenticeship indenture or through the pickup process, since much of the work involved unskilled process needing only strong backs.

Since the major goal of the early high schools tended to be that of preparation for college, it was natural that the curriculum in our high schools was organized around the subject-centered basis that one would find in the normal college or university. The high schools gradually established a Carnegie unit of organization which would allow the colleges and universities to identify those students who had completed the course of studies each college assumed was the best one to prepare for further education at the collegiate level.

While every set of objectives including the "seven cardinal principles of education," "the ten imperative needs of youth" or the "developmental needs of youth" as identified by Havighurst all established the importance of preparing youth for employment who are not going on to college. The high school curriculum of yesterday and today, however, has essentially remained a subject-centered college preparatory curriculum. Our present high school curriculum is oriented to the college preparatory purposes with a smattering of liberal arts, co-curricular activities and cultural subjects serving as the basis for calling a school a "comprehensive high school."

The obscurity of the organization of the present curriculum and the fact that the most intelligent students have tended to do well in the college preparatory curriculum has grossly misled our people into assuming:

1. That the subject-centered curriculum was the best way to prepare for college,

2. That this curriculum was the best way to prepare for life.

The present subject-centered college curriculum assumes:

1. The preparation for work cannot prepare for living and citizenship as well as for earning a living,

2. That liberal arts which tend to contribute to enjoyment of living takes precedence over preparation for employment,

3. That most of the youth participating in our public education system, including the large number that drop,

out from the system, can continue to get training for work through the pickup method, ignoring the technological nature of our society, the economic organization of that society and the social changes taking place.

It is my thesis that:

1. The price of our technological age is pre-employment training for the majority of youth who wish to enter employment in business and industry,

2. Curriculums planned for pre-employment training can also make a major contribution to the development of good work habits and attitudes and the education of youth as a participating citizen in our form government,

3. Curriculum planned at the high school level cannot assume the role of education for a lifetime,

4. While both cultural subjects and occupational training are worthy services of educational programs, our economic society and the opportunity to participate in the cultural values offered are dependent upon employment in that society.

The heavy unemployment among unskilled youth in the ages of 16 to 24, particularly in the ghetto areas of our major cities, and the growth of numbers on our welfare roles even in this period of high employment would suggest that unemployment creates poverty and that people in poverty do not participate economically or culturally in our society. In an article in The Wall Street Journal, Harley J. Lutz, Professor Emeritus of public finance at Princeton University said:

> "Poverty is essentially a problem of distribution of wealth. It has three significant aspects, and for each there is a specific remedy.
>
> "The three aspects are: An excessive number of people need employment; the skills needed for remunerative employment are lacking, and capital to provide the needed jobs is insufficient. The obvious corresponding remedies are population control, better training facilities and more capital investment. . .
>
> "Better training for the new skills. New materials, processes, and machines have been developed at an

> amazing rate, but educators have not revised and adjusted the educational process to conform with these changes. In consequence, too many people have been unable to acquire the skills called for by the new industrial age.
>
> "The failure of educators to keep pace with the changing economic and social environment may be laid, in large part, to fundamental differences of theory regarding the purposes of education. These purposes are training in some sort of craft, occupation or profession in which the individual can earn an income sufficient to provide a comfortable living for himself and his family, and orientation in the culture of his society that will give his life greater fulness and meaning. Both are important and neither can be adequately achieved by the time the individual arrives at maturity. However, whatever is to be done by schooling with respect to the first objective, so far as a large proportion of each new generation is concerned, must occur within the first 20 years or so of the life span. To this extent it should have priority. The individual's cultural development is not limited in time or extent to the knowledge and understanding acquired in college, although many assume that the bachelor's degree is a certificate of a complete education."

I would suggest, therefore, that vocational education is a very worthy purpose in the educational program today and that it should become a primary purpose of education at the secondary level in order to enable young people to enter, to adjust to and to improve a technological society.

LEARNING THEORY AND PRINCIPLES OF LEARNING

Early practitioners and theoreticians in the area of education, such as Pestalozzi, Rousseau and Froebel had no need to concern themselves with preparation of youth for employment since the youth were prepared for employment in a father-son relationship. They found, however, that education separated from the life experience of the youth was not effective. Without understanding the psychological principles behind learning, they found that they had to relate the teaching in school to the work life of youth. So we find that early in the history of formal education, proposals of the educational process should involve a half-day in school and a half-day at work with relationships to be drawn between the two experiences.

Psychological studies confirmed the experiences and observations of the early theoreticians in education. Through the psychological studies, principles of learning were developed which could serve as guides for instructional methods and curriculum organization. Gerald Leighbody, in his book "Teaching Industrial Subjects", summarized the principles of learning as follows:

1. We learn best when we are ready to learn. When we have a strong purpose, a well-fixed reason for learning something, it is easier to receive the instruction and to make progress in learning.
2. The more often we use what we have learned the better we can perform or understand it.
3. If the things we have learned are useful and beneficial to us, so that we are satisfied with what we have accomplished, the better we retain what we have learned.
4. Learning something new is made easier if the learning can be built upon something we already know. It is best to start with simple steps which are related to things we can now do or which we already understand, and proceed to new and more difficult tasks or ideas.
5. Learning takes place by doing. Before the learning can become complete, we must put into practice what we are attempting to learn.

These psychological principles of learning were not developed for vocational education or by vocational education, but even a cursory review of these principles will show the massive possibilities present in vocational education programs to utilize these principles in both curriculum organization and teaching methods. John Dewey, a modern theoretician in education, put together the experiences of the early theoreticians, and the principles of learning developed by the psychology studies and made popular the phrase "Learning by Doing."

Prosser's sixteen theorems for vocational education, so well known to the people within our field and so applicable today as they were at the time they were written, put into language for vocational educators the proven principles of learning and the educational theories so well expressed for the total educational program by John Dewey.

All experience in education, all the results of scientific studies have indicated that to be effective education must be experience-centered. A sound curriculum, therefore, must have experience as its center if it is to be effective in the education of youth and adults. Vocational education requires an experience-centered curriculum.

Discussions with most high school principals will indicate that they believe that most of their graduates go on to college. In the state of Ohio, however, the facts show that for every one hundred students starting the first grade, seventy-nine will graduate from high school, thirty-two will start to college and fourteen will finish college.

Our curriculum in our public schools, therefore, tends to point itself towards the needs of the majority of the students. If research showed that it was necessary for a young person to make a choice between a college preparatory program which prepared him for a success in college and a vocational program which prevented him from attending college, perhaps most educators would take the view that we must make sure that all young people have the opportunity to prepare for college. Fortunately, however, research has indicated that it isn't necessary to make this kind of choice even when the student invests himself in a depth program of vocational education involving three-fourths of his day during the last two years in high school.

In Ohio, all graduates of vocational education programs are eligible to attend state universities. If universities would believe thirty years of research, those who can think, write and read better than the average student--all could be entered into universities of their choice. The Carnegie unit approach to curriculum organization imposed upon the public schools by our universities has absolutely no basis in reasearch. Thirty years of research dealing with success in college has proven that success in college correlates more clearly, more directly, with how well a student did in whatever he took in high school than it did with any certain set of subjects.

To report just the findings of two such studies, David Cook, in his study on "Predicting Success in College" at the University of Indiana, summarized his findings in these words:

> "It did not make a great deal of difference whether a student took a college preparatory course (with more mathematics, language and science) or a non-college preparatory course so far as grades earned in college were concerned. . .
>
> "Advanced study of languages in high school had no relationship to grades earned in foreign language in college."

Paul B. Diederich in an article "The Abolition of Subject Requirements for Admission to College" made this statement:

> "The only requirement for entrance to the University of Chicago is 'that students be able to read, write and think a good deal better than most students are now able to do.'
>
> "Simple tests of these three abilities have a higher correlation with marks in all courses than any other major has ever devised.
>
> "Our system of public secondary schools, therefore, is in the grip of a standard curriculum which is based on the fundamental premise that the pursuit of certain prescribed studies is essential to success in college. It has been proved as completely as anything in life is ever proved that this premise is false."

I would submit to you that our present high school curriculum is bankrupt. It is subject-centered in opposition to all that we know about the learning process. It worships at the altar of math and science as gods rather than as tool subjects. It assumes that the Carnegie unit requirements for entrance into college has a basis in fact for success in college and this assumption has been thoroughly disproven. It accepts an 1850 concept of a curriculum organization pointed towards preparation for the professions as the basic curriculum for all youth. The curriculum in the majority of our high schools is not relevant to either the needs of youth or the needs of our modern society and must face a massive change.

Curriculum organization for vocational education must avoid the same practices and problems which have made the present high school curriculum bankrupt and must not allow itself to be restricted because it might interfere with the real high school educational program, "the college preparatory curriculum."

SCOPE OF CURRICULUM

In the early 1940's the term "progressive education" became a popular term in education, but then fell into disrepute as a progressive education movement became mistakenly aligned in the minds of people with the few in the movement who thought progressive education was related to the question of, "What do you want to do today, kids?" The progressive education concept, however, envisioned a concern for the whole student and not only a responsibility for teaching him subject matter and skills. A concern for the whole student would indicate a concern not only for his exhibited educational progress in the classroom or laboratory, but also for the social, economic, physical and mental health conditions that had a bearing on his participation in the educational program.

While educators for years have given lip service to this concept of concern for the whole student, education has not had either the understanding, the financing, or the staffing to do more than give lip service to this concept. I am suggesting that the educational curriculum cannot be separated from the supportive services involving enrichment or remedial education, social services, economic support, and physical and mental health services. Our experiences in the job corps centers and in the programs operated within the states under Manpower Development and Training would suggest that schools that ignore the importance of these supportive services are encouraging high dropout rates of youth, particularly those from the low socioeconomic families. Experiences today would also suggest that the cost of welfare is such that it would pay society to make sure that an investment is made in every young person to enable them to enter and participate in our society as tax producers rather than tax consumers.

Investment in education and supportive services are perhaps the only solutions to our social and economic problems of our day. Funds invested in these are truly an investment, not a cost. If this concept were to be accepted with the schools, it would affect all facets of the educational program, including facilities, equipment, staffing, student participation and curriculum organization. Most approaches to curriculum organization have not given attention or consideration to the integration of support services as a part of the curriculum.

Scope in curriculum for vocational education must also recognize the interests and abilities of the youth and adults who are to be served by vocational education. The Vocational Education Amendments of 1968 indicate that any youth or adult who wants and needs vocational education should have the opportunity for a program of high quality. The varied interests and abilities of the persons to be served and the broad opportunities in the labor market point toward the importance of a broad student base and tax base to provide for an adequate scope of program. The inability of the population and the movement of persons from the rural to the urban emphasize the importance of the goals of the Vocational Education Amendments of 1968.

PRINCIPLES OF CURRICULUM ORGANIZATION

Studies in curriculum organization have pointed the way to improve practices in education. While all of us have had to study curriculum organization, public education has tended to ignore improved curriculum organization because the teachers coming from the colleges are prepared to enter into only one type of curriculum pattern.

At the time that our high schools were organized, the discipline-centered pattern of higher education, in which the disciplines were divided into subjects, was passed on down to the new high school organization. This organizational pattern was established on the basis that if students were to succeed at the college level, studying subjects as they would in college was the way to prepare for success. It is sad, but true, that the junior high school also tends to follow the same subject-centered curriculum as established for the high school.

Curriculum theory as studied in your collegiate classes would point out that one way to encourage interest and learning on the part of the students is to correlate instruction within two or more subjects in such a manner that a point of interest is used as the approach. Under this approach the student can see the relationships between the subject areas. Experiences reported indicate that such a procedure for correlating subjects does serve as an interest stimulator for students. It is obvious, however, that the instructional program is still centered around the subjects and an observation of the educational programs in our public schools indicates that very seldom does a correlated subject-centered program continue such correlation for very long.

Another curriculum organization pattern encouraged in curriculum theory is that of integration of subject areas into one block of time such as combining English and social studies. The concept here, however, is that you still have a block of subject matter to be imparted to students, but that you would use the subject matter of one to teach the subject, content and theory of the other. Such integrated programs have been from time to time successful but since they still are centered in terms of teaching subjects, there has been no broad acceptance of this pattern of teaching within our public schools. While this integrated subject approach provides a better method of curriculum organization, it is still subject-centered rather than student-centered.

The eight-year study growing out of the Commission on the Relation of School and College established by the Progressive Education Association in 1930 focused attention on a new process of curriculum organization called the "core curriculum." Dr. Harold Alberty, then Professor of Education at Ohio State

University, was one of the foremost proponents of the core approach to curriculum organization. While in some sense the integrated or correlated subjects' approach might be identified as a core curriculum approach, Dr. Alberty's concept started with the problem of the student as the center of the core with subject matter, skills, technical knowledge interjected into the program on an experience-centered base. While much of the core curriculum work in the eight-year study was built around social problems or around adolescent needs, Dr. Alberty in his development of the theory of the core program, identified a pegged core concept in which the occupational goal of the student could become the center of the core and the experiences and knowledge necessary to prepare for this goal could become the basis for the curriculum organization.

The Smith-Hughes Act of 1918 and the sixteen theorems of Prosser envisioned vocational education as a core program in which the student's occupational choice became the center. The core curriculum concept was proven sound in the eight-year study. This curriculum approach, however, is the most difficult approach in curriculum organization, since it does not provide for neat little blocks of subject-centered learning which can be organized and taught easily by the instructor and measured easily by appropriate tests. Essentially, people in vocational education have been operating under the core curriculum concept.

Construction of a curriculum can be compared with a three-legged stool. Each leg of such a stool is necessary and the balance between the three legs is important. The three "legs" of curriculum development in vocational education are:

1. What you believe about the individual and education,

2. What you believe about society and economics,

3. What you believe about vocational education.

As with the stool, all three are important, all three must be balanced. Your judgement concerning these factors will affect your curriculum development efforts.

Some suggested considerations for each of these areas of consideration are as follows:

Individual and Educational Setting

The purpose of education is to perpetuate and improve the society in which it exists. Our technological society requires all persons to receive the opportunity to earn an adequate living. It further requires all girls to be prepared for home management and/or the dual role of wage earner.

Each of us has a development potential going beyond environment and heredity. We are not clay to be molded or rugs to be unfolded, but individuals with the rights to opportunity to develop to our fullest capacity full intellectual development.

Each individual in our state must have the opportunity to develop in accordance with interests and needs. No one should leave our education system without the ability to earn a living.

Any unemployed out-of-school youth or adult must be provided with training for employment.

The public education system must accept the responsibility for the education of the whole child and must be provided the tools for the: PHYSICAL, MENTAL, EDUCATIONAL, SOCIAL development of the child, including funding for remedial deficiencies.

No individual should ever be permitted to leave school with a serious social, mental or physical problem. Our schools have a basic responsibility to provide for such individuals.

Work-oriented education should be recognized as an effective means for selecting and preparing for employment. It must also be seen as a means of individual fulfillment.

Meaningful education must be based on sound principles of learning. It must be experience-oriented.

Educational innovation requires increased categorical financial aid for specific programs and general aid for overall development. This aid must come from federal, state and local sources.

To survive, public education must accept greater responsibility. Services must be expanded and improved. Education must be prepared to account for successes and failures.

Public education must adopt and put into practice human resource centers.

The educational and supportive services needed for our modern society will require a broad student base and broad tax base.

Social and Economic Setting

Most jobs today and in the future will require formal training.

We must choose between increased welfare or an expanded program of preparing for work.

Job preparation and remedial education programs for adults too expensive to serve as a continuing solution to current social and economic problems.

Expanded and improved system of vocational education and guidance must be a major part of the change in our educational system.

Vocational Education

A total vocational education program will include:

1. Pre-employment programs for youth and adults and,
2. Programs recognizing different interests and abilities, including programs for persons with special needs,
3. Programs providing workers necessary for the social, economic, mental and physical well-being of the population,
4. Supportive services to provide for physical, mental and remedial education needs of the individual,
5. Four essentials of the vocational education process are:
    - A. Faculty occupational experience,
    - B. Broad time base and core curriculum offerings for occupational needs,
    - C. Adequate facilities and equipment to prepare for occupational competence,
    - D. Clearly defined student goals with a realistic chance for success.

Programming for vocational education must provide for:

Zero Reject
Zero Dropout
100% Placement

Properly taught, vocational education can serve as a "humanity." Methods and scope of instruction, not discipline content, identify a "humanity."

Vocational education is not only a means of preparing for earning a living, it is a method of education.

Industry, business, parents and the public must be involved in the initiation and continued operation of vocational education programs.

Vocational education provides an established federal, state and local relationship to channel leadership and funds from federal and state sources into local communities for educational improvements and program expansion.

Occupational expertise is more important in teaching the disciplines related to an occupation, rather than expertise in the discipline.

Vocational education programs on an area basis provide a more realistic approach to vocational education in the suburban or rural areas than small school districts so prevalent in many areas.

Accountability is the determination of specifically stated educational goals and the post-evaluation of results.

The concept of accountability in education applies to:

Instructional programs,
Local and state leadership,
Teacher education.

CURRICULUM ORGANIZATION PROCEDURES FOR VOCATIONAL EDUCATION

On the basis of the information suggested in the sub-heads above in this paper, I would submit, therefore, that curriculum for vocational education must be organized on the basis that:

1. Preparation for initial job entry is a basic responsibility of the public education program.

2. The curriculum must be goal-centered at age 16 years and above and for most youth, this goal can be most meaningful when related to preparation for employment.

3. Curriculum changes are demanded in order to make the curriculum more relevant to the social and economic conditions of our day and the maturity of our youth.

4. A core curriculum concept based upon the occupational goal of a student can provide both a meaningful preparation for employment and a means of education of youth to participate effectively in our technological society.

5. A curriculum for the future will concern itself not only with the need for the knowledge of skills, but with a total educational, economic, social and physical needs of each student.

Your attitudes or decisions concerning the concepts and recommendations listed earlier in this paper provide the basis for curriculum organization for vocational education. Sound curriculum organization involves hard work, understanding of learning theory, understanding of educational processes and procedures often beyond the ability or time available to the individual teacher. While it is true that all teachers must participate in curriculum organization, it does not follow that all teachers can successfully organize a sound curriculum. Too many of our efforts in vocational education have been pointed at experiences in starting and understanding curriculum organization rather than with the complete development of effective curricula for the programs.

An understanding of the process of curriculum organization is easy, but the job is tedious. The first step in the process seems rather obvious. If you want to prepare a young person to successfully enter an occupation, you must know what the occupation requires of the successful worker. We've identified the first step in the process of curriculum development as occupational analysis--what the successful worker must be able to do on the job. There are many formal patterns for occupational analysis and most are based on analysis of "Do" and "Know." Some of the less technical oriented areas or occupations could possibly be developed under these two simple headings, but such an approach often will ignore some of the important elements within a job. A broader pattern for analyzing a job would include a review of the job under the following major units:

1. Work Units, Jobs or Operations,
2. Skills and Work Practices,

3. Safe Practices and Work Precautions,
4. Equipment, Tools and Materials,
5. Mathematic Applications,
6. Science Applications and Occupational Information,
7. Specification Interpretations,
8. Occupational Terminology,
9. Work Habits and Attitudes,
10. Personal Relationships,
11. Physical Capabilities Required.

The first eight items identified above are recommended by Elroy Bollenger and Gilbert Weaver in their book on trade analysis. This approach is not new with Bollenger and Weaver and is found in similar format in most of the literature suggesting processes of occupational analysis. None of the literature, however, has concerned itself with the last three items. Perhaps these last three items have gained added significance as we are committed to the concept that we must prepare all youth to enter effectively into our business and industrial society.

It should be observed that not all occupations have mathematic applications or science applications and in some cases other tool subject areas can be added to this list of topics. The underlying principle is to make an analysis of what it takes to be successful on the job.

A second step in the process of curriculum development would be to develop a course outline. A course outline is usually prepared from the occupational analysis and traditionally includes:

1. A Title,

2. Objectives of the Course,

3. A Listing of the Skills and Technical Knowledge Topics to be Covered in the Course.

Such a listing should be in a logical teaching order. The course outline will also normally list prerequisites for the course and the length of the instructional program.

The third step in the process of curriculum development is a development of a course of study. Giachiro and Gallington in their book on course construction say that a really comprehensive course of study should include:

1. A general introductor statement specifying the main concepts of the course,

2. The grade level for which the course is intended,

3. The main divisions of the course with a time limit for each,

4. Specific practices that are being followed in teaching,

5. Philosophy and objectives pertaining to the specific area of instruction as well as the course aims,

6. An orderly arrangement of the manipulative operations to be learned,

7. An outline of the essential related technical information,

8. The media to be used in learning the established skills and knowledge (projects, jobs, problems, et cetera),

9. The activities which are designed especially to foster the development of desirable attitudes and good work habits,

10. The nature of instructional aids that will be used to simplify learning.

Many other authors provide a similar outline for a course of study. The uniqueness of the proposals by Giachiro and Gallington is the inclusion of activities designed to foster the development of desirable attitudes and good work habits.

It is my experience that to be effective in a developing of work habits and attitudes, there must be specific plans included in the course of study and instructional practices established to achieve such goals.

The next step in curriculum organization is normally assumed to be the development of the instructor's lesson plans. My experiences in the navy have indicated to me that it is not essential that each instructor develop his own lesson plans, but it is essential that each instructor adapt any lesson plans provided him to his own personality and instructional situation. Many examples of lesson plans can be found but most are based on the four-step method of instruction which includes:

1. Preparing the Learner,

2. Presenting Instructional Topic,

3. Providing Applications of the Knowledge Learned,

4. Testing Student Understanding and Ability to Achieve.

CURRICULUM MATERIALS FOR VOCATIONAL EDUCATION

A selection and development of instructional materials is an integral part of both the organization of the course of study and a development of lesson plans. Such instructional materials may include:

1. Teacher and Student Materials,

2. Materials for Group Instruction,

3. Materials for Individual Instruction.

Education as a whole, and vocational education in particular, have always placed great emphasis upon the importance of instructional materials. Significantly, most of the materials have been based upon the group instructional process rather than the individual instructional process and even when materials have been developed for use by the individual student, they are seldom used effectively by the instructor for that purpose. If individualized instruction has been basic to vocational education in dealing with the teaching of manipulative skills, the same emphasis upon individualized instruction has not been placed on the teaching of technical knowledge and understandings and on the needs for remedial education on the part of youth participating in the program.

Vocational education can serve as a motivation to a total learning process and the modern technology of today makes possible the adaption of instruction to the varied ability and educational levels of the students involved in the educational program. A series of guidelines for the development of sound curricula materials might be listed as follows:

1. Reasonable Basis in Authority,

2. Accurate Technically,

3. Adequate in Scope to Cover the Learning Unit,

4. Written at Educational Level of Students,

5. Divided into Simple Learning Units,

6. Organized for Individual Use,

7. Provide for Individual Student Response and Learning Evaluation,

8. Easy Procedure for Teacher Checking of Student Achievement,

9. Attractive in Appearance.

A man highly skilled in the area of computer operations met with me to raise questions as to why education was not moving more quickly into the use of television-instruction, computer-based instruction, audio visuals of the tape loop type. He pointed out that in one of the new schools built recently in his area, each classroom had two walls covered by blackboards. He raised the question as to why blackboards were needed, except in a few isolated instances, when overhead units would be so much more effective. It is sad, but true, that most of our educational efforts in vocational education, as in all education, except for manipulative instruction, tends to be group centered and we have neither the hardware, instructional materials or teaching skills necessary to make effective use of the broad media available to us today.

In Ohio we are in the process of building massive numbers of new facilities for vocational education. Curricular decisions must be made in order that these decisions can be implemented in the physical facilities and equipment planned for the building. Modern curriculum procedures would suggest the importance of a heavy investment in facilities and equipment for individualized study. Our observations are, however, that even when facilities and equipment are provided, the materials to implement an individualized study program are slow in coming and teachers are even slower in adapting their instructional methods to new concepts of education.

Vocational education offers the greatest opportunity to establishing broad blocks of time for the use of the new instructional methods and materials. Experimentation in the training of the unemployed for employment shows that the use of modern hardware, materials and methods provide remarkable success in teaching the less able and the illiterate. Such advantages would undoubtedly give the gifted students a massive boost in their achievement.

The answer to this problem, therefore, is twofold. It calls for the expenditure of funds--either new monies or redirection of monies--for the necessary hardware and materials to individualized instruction, for the improvement of teacher attitudes and skills in the use of individualized instruction, and for the improvement of teacher attitudes and skills in the use of individualized instructional approaches.

We know that industry has been willing to invest in the individualized instruction approach because they can measure the results of their efforts in terms of increased profits resulting from increased productivity. The public, however, unaware of the possible increased learning (product of public education) on the part of the students, is not as ready to invest tax dollars in such a program.

The answer to the change in teacher attitude is a function of in-service training and administrative leadership on the part of supervisors, principals, and superintendents. There cannot, however, be effective teacher acceptance of some of the individualized instruction processes until we provide the teacher with the type of supportive personnel which will enable him to function as a professional and to give leadership to the instructional process without having to do all the menial time-consuming functions that could be served by aides or technicians.

SUMMARY

I would suggest the following guidelines for the evaluation of the vocational education curriculum. A curriculum should:

1. Consider the individual, society and the content of the area of instruction,
2. Be organized around the student's goal,
3. Be psychologically sound,
4. Be experience-centered,
5. Cover skills, technical knowledge, work habits and attitudes, supportive educational services and evaluative techniques to analyze student achievement,
6. Provide sufficient time for the student to prepare for entrance into employment in keeping with his goal.

Vocational education should not be viewed only as a means of getting a job. It should be viewed as a method of education and the curriculum should reflect this concept. Curriculum development starts with a job and ends with a student on the job technically competent and able to succeed. Work itself means more to the individual than the paycheck they receive. Without work, there can be no leisure. The future of our nation rests on the productivity and work attitudes of the people. Jobs--not welfare--are the answer to the social and economic problems of our nation, and the unique function of vocational education is the preparation of youth and adults for employment.

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OVERVIEW OF CURRICULUM DEVELOPMENT NEEDS FOR VOCATIONAL AND CAREER EDUCATION

by
E. L. Kurth*

A cultural phenomena emerging in the beginning of the decade of the 70's is the sociological, psychological, economic, and educational recognition of the work ethic as a neglected aspect of the American ideal. New terms are being used to identify developing concepts which interrelate the various elements of our technological culture. Work fare and life fare are in the vocabulary which is being used as a credibility base to offset the regressive characteristics of welfare. Psychologists discuss self-awareness, self-fulfillment and self-actualization as stages in developing a positive self-concept. Social disintegration and alienation are pointed to as symptoms of a sick society. Business and industry are concerned with the economics of absenteeism which doubled during the 1960's to 5% of the work force and now often is 15% on Mondays and Fridays. Production ratios that do not increase at the same rate as wages, labor's demands for humanizing production lines, and employee refusals of overtime are symptoms that the economy has concerns that go deeper than unemployment, underemployment and the unhappily employed. Education is being asked to account--to be accountable--for failing to give meaning and relevance to curriculums whether in elementary and secondary schools or college, to prepare for living a productive and rewarding life. In short, for not preparing students to cope. Cited are the students who score below their grade level in basic skills, high drop-out rates, absenteeism, academic failure, drug abuse, vandalism, assaults on teachers, fellow students and administrators.

These are the fruits of the 60's which were launched in the lexicon of "soaring" and landed with a "sorry" thud among riots and demonstrations, drug addiction and increased crime and violence and vandalism.

Throughout the history of this country, education has been the hope and aspiration of people for achieving the American goal of the "good life"; of realizing the American dream. The disparity within our culture that Gunnar Myrdal defined, "that not everyone has the same access to the opportunities and benefits of a free society," has caused many to doubt that America can, through its social, economic and educational structure, solve the illnesses that have now surfaced.

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Hopes that it can, are exemplified by a resurgence of commitments to work by youth. The Peace Corp and VISTA which were launched in the 60's are continuing examples of self-actualization through service which attracts many youth and adults. A recent poll by Yankelovich showed that among college-age youth 79% believed that commitment to a career is essential; 75% believe that collecting welfare is immoral for a person who can work. Other surveys show that youth and adults take their work more seriously, expect more from education which prepares them for work, and indeed, request more and demand more accountability from their education.

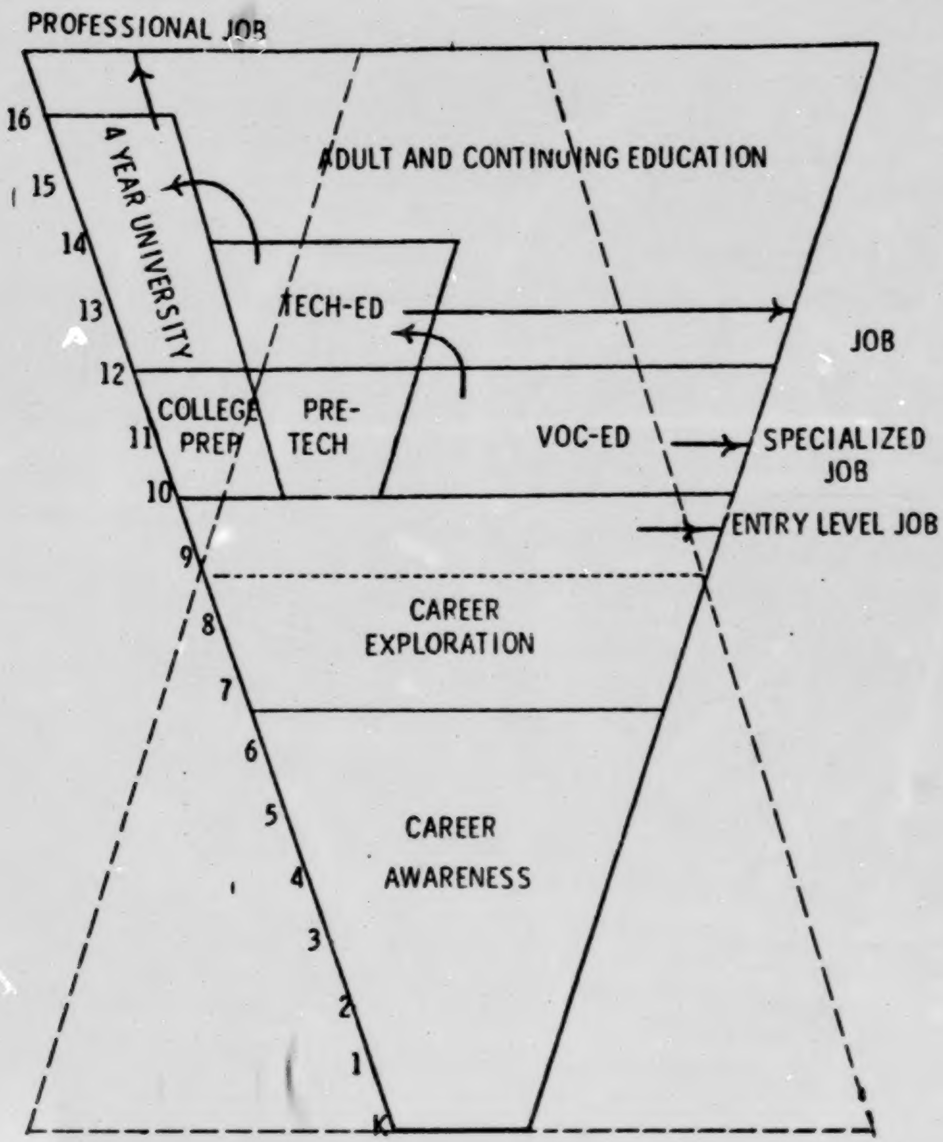
These forces and factors are resulting in another opportunity to make education relevant to the socioeconomic needs of youth and adults and synchronize it with the transformation occurring in the work ethic.

The U. S. Commissioner of Education, Dr. Sidney Marland, has given national priority to the concept of career education. He has also given support and encouragement to the development of this concept as it is emerging in many states and localities with a variety of definitions as an answer to some of the pervasive socio-economic educational, economic and political problems cited earlier. He has stated often and emphatically that all education must have a defined, stated purpose. For elementary and secondary education in this country that purpose is to prepare all students as well-developed people to enter successfully either a job or some form of post-secondary education as soon as they leave K-12 system. The overall goal is to develop citizens who function well in society, who can cope with the social, economic, psychological, educational, political and technical complexities of our culture. This goal must include those who may need to leave the system at any point and re-enter for further study for job preparation. The national goal in essence is to prepare every person for meaningful work or meaningful further education as a part of a productive career and personal fulfillment. They must have the competency to cope.

This is career education. The concept includes the entire educational program from kindergarten through the secondary school and the post-secondary level and adult and continuing education. It will give youth and adults an opportunity to make decisions about their life work. It is involving changes in curriculum content and teaching procedures. In brief, it holds that all students need to learn about the wide range of career possibilities in our technological culture; what is involved in getting a job and holding it; sound guidance and counseling to assist them in considering their interests and abilities in relation to possible careers; the occupational needs of their community, state and the nation; specific job skills and actual help in finding a job. Too often a majority of our school leavers, whether by graduation or before career choices have been made, get little or no information, experience or assistance. Job choice happened or was selected with the same accuracy as making a choice from a gum machine. A better way is the concept illustrated by the following diagram (1). This basic structure will be used to discuss what is happening in career education and some of the rationale which accompany its implementation. The career development concept starting in kindergarten provides for increasing information and experience related to job requirements, skill development and job entry and upgrading skills. The depth of study or information about occupations or careers increases from the kindergarten on up. Superimposed on this diagram is a broken line triangle which illustrates the decreasing breadth but greater concentration of information and experience related to career choice and job preparation with increasing education and maturity. The need for awareness and exploration may apply again at any level -- high school, post-high school or adult.

Career choice or decision-making is a cumulative process which results from a growing awareness of self and a growing awareness of career options and requirements. With maturity and education, the cognitive (knowledge) and affective (attitude and value) base broaden while the psychomotor (skill development) both broadens and deepens as career choices become more specific.

The school curriculum should be built around the reading, writing, and computation skills needed for jobs and work. Ninety-five percent of people between the ages of 24 and 54 will at some time in their life need to work and will be employed. The work force of this country is employed in more than 20,000 distinct jobs under 35,000 job titles as listed in the Dictionary of Occupational Titles. To provide a base for categorizing these into units which can be managed in a teaching/learning situation, they have been codified into 15 major groupings or career clusters and 86 sub-clusters or job families. The 15 clusters sub-categories and factors considered as shown in chart (2) are:


PROFESSIONAL JOB
16
15
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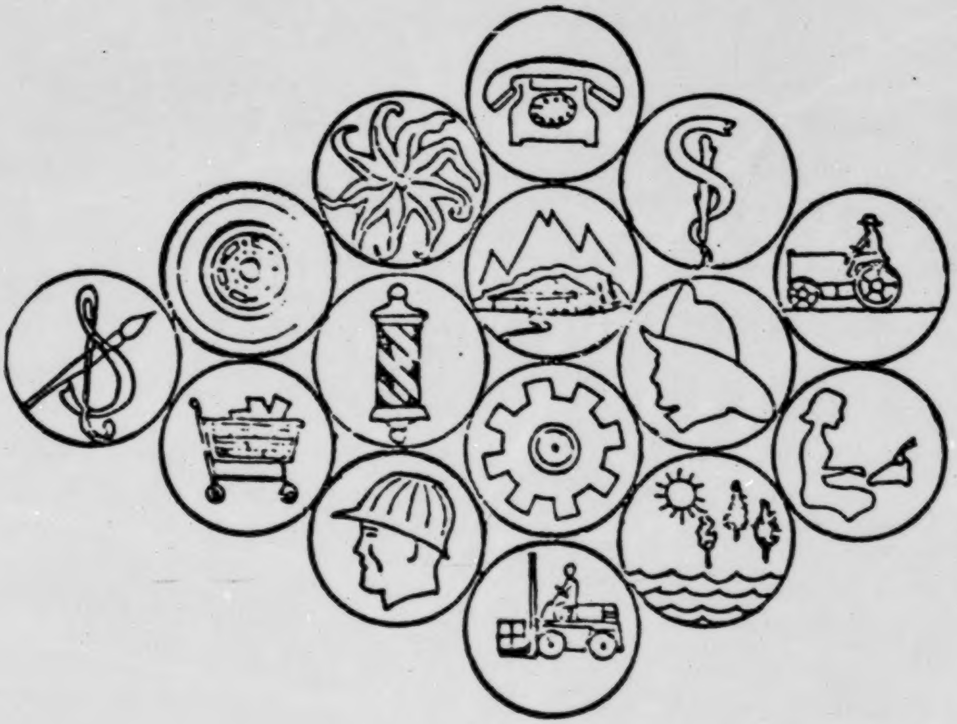
K
4 YEAR UNIVERSITY
ADULT AND CONTINUING EDUCATION
TECH-ED
JOB
COLLEGE PREP
PRE-TECH
VOC-ED
SPECIALIZED JOB
ENTRY LEVEL JOB
CAREER EXPLORATION
CAREER AWARENESS

CAREER EDUCATION

DETERMINING CLUSTER CONTENT

A. Major Job Cluster
B. Sub-Clusters
C. Job Groups
D. Individual Jobs
E. Task Analysis
F. Basic & Related
   Skills

Social,
Economic,
Health, and
Working
Conditions



1. Agri-Business and Natural Resources Occupations,
2. Business and Office Occupations,
3. Communication and Media Occupations,
4. Construction Occupations,
5. Consumer and Homemaking Occupations,
6. Environmental Control Occupations,
7. Fine Arts and Humanities Occupations,
8. Health Occupations,
9. Hospitality and Recreation Occupations,
10. Manufacturing Occupations,
11. Marine Science Occupations,
12. Marketing and Distribution Occupations,
13. Personal Services Occupations,
14. Public Services Occupations,
15. Transportation Occupations.

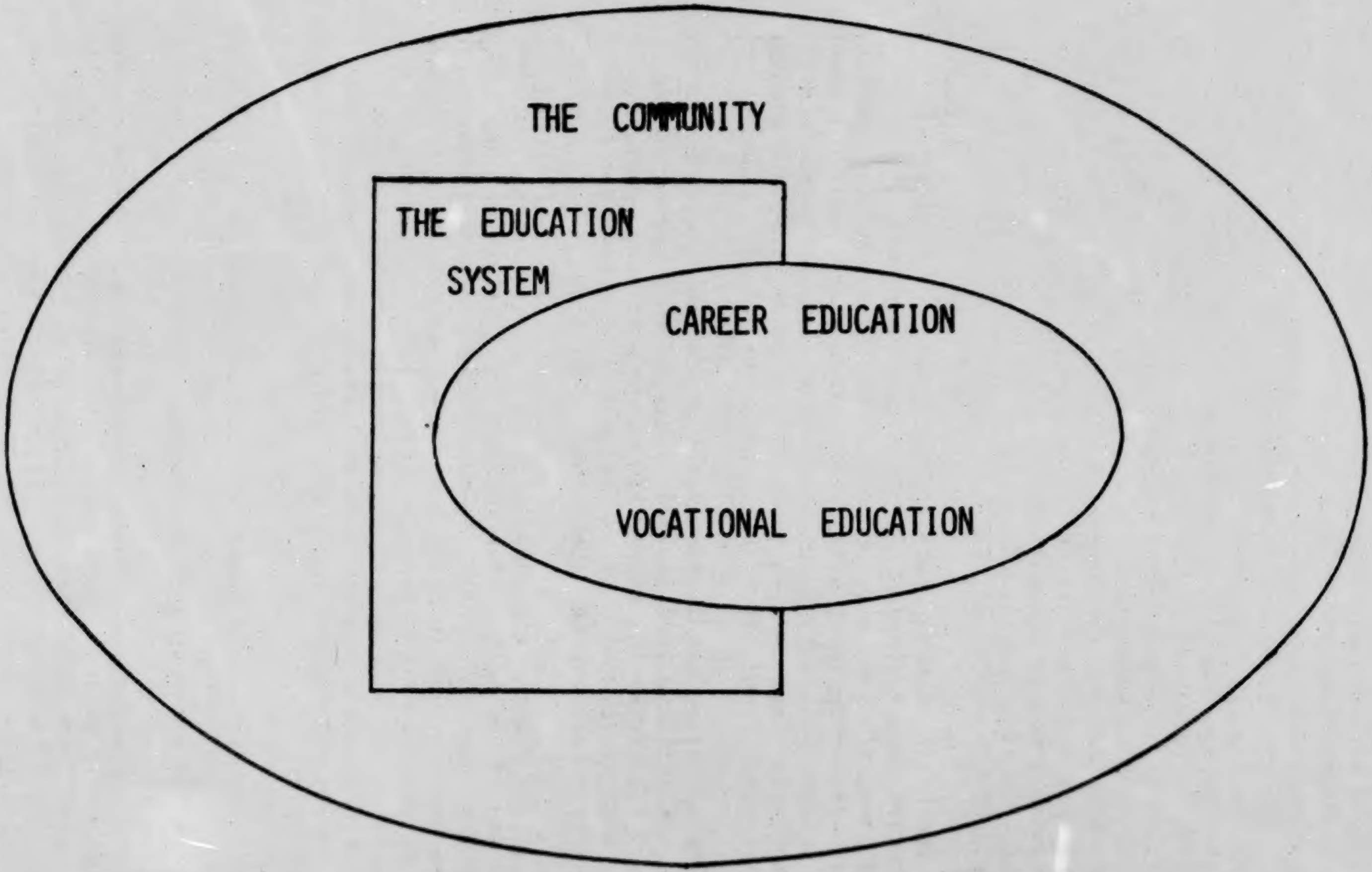
The basis on which this grouping was done took into consideration five criteria: (1) they must encompass most existing jobs; (2) they must be capable of being used for training; (3) they must be congruent with labor market entry jobs; (4) they must be translatable into curriculum materials and instructional strategies; (5) a person with basic skills in one job in a cluster would have entry level potential in other jobs in the cluster.

School-based models for career education, according to the U.S.O.E. concept have been experimented with in numerous states and school districts: Michigan, New Jersey, Arizona, Georgia, Colorado and California. Many other models have been put into operation in numerous other states and localities.

In the first six grades in the school-based model, all students are to become familiar with career clusters through instructional materials and first-hand experiences including field trips and the kinds of teaching approaches now used to complement courses in language arts, social studies, science and math. The career information in regular subject matter can be identified and emphasized by the teacher. Many of the pilot projects have already developed supplementary materials and teaching aids for each subject area.

At the elementary grade level career education can become the method by which the content of the regular curriculum becomes relevant to the interests and developmental needs of children.

Since the days of Comenius, Pestalozzi and Rouseau we have known that children learn more quickly and best in situations that are non-verbal, manipulative, inductive and kinesthetic. They learn best when knowledge taught has an experience base. Behavior changes--motivation to learn--occur when children have an


THE COMMUNITY
THE EDUCATION SYSTEM
CAREER EDUCATION
VOCATIONAL EDUCATION

CAREER EDUCATION'S PLACE IN EDUCATION

opportunity to try out, to make things, to see, to hear and to smell work. Personal, social and economic attitudes toward work and the necessity for work develop best from experience.

In grades 7, 8 and 9 pupils would explore the clusters that interest them individually and which are taught and can be chosen in business education, industrial arts, home economics and agriculture. How the content of other subjects relates to occupations can also be taught.

In grades 10, 11 and 12 the students can concentrate on selected career areas for specialization with the options of: skill development for job entry employment after high school; combine academic and job training courses as preparation for post-secondary education; or academic and technical content courses for enrollment in higher education for a professional degree.

An important aspect of career education would be that after reaching non-compulsory school attendance age opting back into school would be as easy as opting out. With maturity come changes in interest, more realistic and sometimes higher aspirations, more need for economic security, any one of which may be a reason for returning to school. Schools and colleges need to provide for easy re-enrollment to meet individual needs. Close articulation must be developed between all facets of career development, but it is crucial between high school and post-high institutions.

At the post-high school level, there needs to be great flexibility in meeting needs of individuals and many options for supplementary job preparation, upgrading skills or if a change of jobs is necessary, new job entry skill programs. The trend in some industries to hire as part-time workers, women who have home responsibilities, older men and women who are near retirement, eligible to or have retired has resulted in numerous benefits for both employee and manager such as increased production, less overtime, plus increased enrollment in classes to learn new required skills. These need to be a part of career education.

Career education is much more than what is included in our school based models. Diagram 3 shows that it extends into the community as well. Families are involved. Business and industry also have responsibilities to provide meaningful jobs and make adjustments of production job routines to humanize work situations.

Because families, communities, businesses and industry have responsibilities in career education, three out-of-school models are also being developed. One is a home-based program which makes extensive use of television, correspondence courses and possibly tutors. It combines adult education techniques and methods with occupational skills to open career opportunities to mature individuals who have little hope of advancement at present. Mothers with small children at home, handicapped and other homebound individuals would be a primary objective of this program.

A rural residential model is designed to serve entire families who would train together to enhance their opportunities for better employment. A pilot program is in operation at Glasgow, Montana. Some reports of results are to be forthcoming this fall. This center is to serve a six-state area.

The employer-based model is to be created, developed, operated and supported primarily by industrial firms, businesses, labor and government agencies in cooperation with the schools. They will operate work training programs related to their own varied employment needs. Students will obtain basic academic learning in school while learning on-the-job skills, by being employed and by being instructed on the job.

So far an attempt has been made to present an overview of some of the ways the concept of career education is being implemented to develop the competency to cope.

In summary, we must keep in mind that this is a time of ferment and change in society, the economy and in education. There is a tremendous amount of research, experimentation and evaluation directed toward establishing new or changed goals--universal literacy, raising levels of selfesteem, compensatory programs of all sorts to overcome physical, social, emotional and cultural handicaps of youngsters in school; job preparation programs for real work and placement in jobs that are appropriate for the ability of the worker and have meaning for him. Each of these goals has a special concern and a specific population to be reached. Career education is a concept whose time has come. It can provide the philosophical base for the content and the method.

Career education is viewed as giving new meaning to learning for all young people in school. It can embrace the special concerns and special needs of all educational objectives which have been hoped for but unrealized in the past.

Finally, Career Education -- at the stage it is now in, has some agreement on the following concepts and practices.

1. Career education can represent a major part of American education that is life long.

2. Vocational education represents only a part of career education.

3. Career education exists for the benefit of all students and is not restricted to vocational education students.

4. Career education represents a process that begins in the prekindergarten years and continues through all of adult education.

5. Career education involves efforts of the total school and the total community.

6. The basic nature of career education revolves around efforts to make work meaningful, possible and satisfying for all.

7. Career education represents an educational commitment to the full employment ideal. It embraces the values of a work-oriented society and introduces them into the curriculum at all levels.

8. Career education embraces all occupations--career cluster arrangements are means, not ends--career clusters are stepping stones which lead from generality to specificity; they may be compromises.

9. Career education should prepare individuals for the full range of remuneration in employment, from the least remunerative jobs to the most.

10. Career education is the primary responsibility of the public school system which:
    a. Is the best environment where individuals can discover self in relation to the world of work,
    b. Is America's best institution to provide the multiple delivery systems needed for career education, i.e., instruction, guidance, placement, community interaction,
    c. Can provide the basis for implementing the concept that decision making is best when each individual has adequate information and experience to make decisions,
    d. Requires an expanded program for job entry skill development at the post-high school and adult education level.

Your week here at this institute may develop new concepts of career education and perhaps concensus on a general definition. Hopefully also, it will bring a sharing of ideas and successful practices which will implement the opportunity this country has to make learning, labor and life meaningful, rewarding and uplifting to all its youth and adults.

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CAREER EDUCATION: CONCEPT AND CURRICULUM

by
Duane J. Mattheis*

As curriculum specialists a peculiar power lies in your hands. The curriculum is one of the most potent instruments of educational change. If career education is to become a reality for all, it will come about largely through curriculum development and management interplaying with appropriate delivery systems, administration, and settings.

Broadly conceived, the curriculum is a plan for a teaching-learning program. It has five major elements: objectives, content, learning experiences and teaching strategies, teaching aids, and evaluation. Make decisions about these five elements and you are making decisions that get to the very heart of any educational program. And that, of course, is exactly what your work is all about. Some of you, in addition to developing curricula, are involved in curriculum management.

Curriculum management includes decision making, planning, and implementation with respect to: development of curricula; diffusion and dissemination of curricula; basic research in the foundations of curriculum development; coordination of curriculum effort with developments in educational technology and the systems of delivery and administration; the preparation of curriculum development specialists; and the preparation of educational personnel for adapting and using curriculum materials.

I cannot emphasize too strongly the opportunities and challenges that are yours as curriculum specialists--as curriculum developers and managers--in helping to make possible for our young people and adults in education that is relevant, meaningful, geared to the development of occupational competence, and preparation for continued education, as well as broadening in terms of personal horizons, expanded vocational self-concept, and increased motivation toward educational goals. Your role in career education is a powerful one, indeed!

It's been over a year now since Assistant Secretary of Health, Education, and Welfare, Dr. Sidney Marland first talked of career education--and since then many hundreds of thousands of words have been written and spoken on this topic.

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We have held regional workshops and public forums across the Nation; we have produced a film and a brochure; we have even enlisted the help of a "panel of critics" to tell us what educators really think about the concept of career education viewed from their vantage points as teachers, administrators, guidance counselors, etc.

I think by now all of you know what career education is and what it is supposed to do. The basic reason for career education is evident. It lies in our present public school system. And we see it in the ranks of our unemployed. Too many of our Nation's youth are coming out of school ill-prepared to get a job. Often these boys and girls are dropouts; almost as often they are high school and college graduates with general training that "educates" them for potential failure. Today, nearly 2.5 million students annually leave school--either high school or college--with no planned career and few if any marketable skills. Some 850,000 of these are dropouts from our elementary and secondary schools; another 850,000 entered college but left without a degree or completion of an occupational program. The remaining 750,000 are graduates of a general high school curriculum, traditionally the dumping ground for students who do not elect vocational training or plan to go to college.

Such a high rate of failure is in itself distressing. But even more distressing is the high cost of educating these youngsters for failure. Together, these three groups represent a combined outlay of nearly $28 billion--about one-third of the entire amount spent on education in this country last year. And there are other losses, too-losses we cannot calculate in dollars--the loss of confidence and self-esteem, the sense of alienation and drift, the terrible sense of abasement and nonfulfillment that burdens millions of young people as they embark upon their adult lives. The aftermath of these early defections is seen in our unemployment, welfare, and crime statistics.

The other extreme, of course, is the over-educated young person, at least in terms of the career opportunities available when he or she is ready to enter the labor market. This year young American college-level teachers with doctor's and master's degrees are teaching in German gymnasiums or Australian high schools because there are not enough teaching opportunities in this country. In some fields there are seven applicants for every opening. And there are disturbing instances where highly qualified but also highly specialized engineers and other technicians, displaced in the aerospace and related industries, have turned in desperation to running hamburger drive-ins or tending bar.

These are people who have been forced out of their profession. But there are others, too, in need of career training—those who are not willing to retire after 20 or 30 years on a job and who would like to select a second career or be retrained for some other type work in a related field. Career education is a life-long experience. It is for people of all ages, for anyone who wants to upgrade his occupational and learning potential, to develop more fully in any way.

Dr. Marland tells of several friends of his who are seeking new careers in their retirement years. He points out that "at a time when life expectancy is moving into the seventies, the notion that a person should be trained for a single vocation or profession is costly and obsolete." "Nothing," the Assistant Secretary believes, "is more wasteful than human energies and talents that are not being utilized."

So here is another facet of career education--making it possible for an adult to re-enter the educational system to receive further training in his chosen profession, to expand his knowledge so he can obtain another job in a related field, or find a new profession in his later years. As you can see, career education extends all up and down the educational ladder, from kindergarten to college--and beyond. To make career education really work, we must refocus our programs to meet the realities of today. And we must do so without downgrading the student who chooses not to go to college. By making education more relevant to one's life work, we can increase motivation (keep our dropouts in school longer) and improve educational performance.

This then is the purpose of career education as I see it--to develop an educational system directed at maintaining academic excellence yet overcoming the two major faults of our present system: (1) the lack of occupational relevance, and (2) the undesirable and invidious distinctions that exist between the academic and vocational curriculum. Career education would increase the opportunities and options available to all individuals instead of focusing on a particular group or segment of society. It is for everyone--people of all economic, racial, ethnic, and social backgrounds, and levels of ability.

Career education is concerned also with labor market needs. We are still training students in skills that are no longer needed; we must, instead, focus our training on occupations in short supply, on skills of the future. And we must take into consideration the needs of the community, its ethnic background, its history and culture.

The Office of Education has set forth eleven basic operational objectives for its career education program. Because they define the program in most precise terms, let me reiterate them here for you. The program should--

(1) Provide students with a more unifying, relevant curriculum; infuse academic and general curriculum course offerings with career relevance; and channeling of students into tracks.

(2) The program should provide educational experiences to give students increasing knowledge of occupational alternatives and the world of work. This experience should begin in elementary school and continue as long as needed.

(3) The program should provide nonacademic career options (at secondary, postsecondary, and adult levels) which have equal status with academic career options. The unfairly discriminating distinctions between the academic track and the vocational track must be eliminated. This is the most difficult objective to achieve. but one that in the long run will be the most important. Now that the pay for many careers has grown so that it equals or exceeds that for many bachelor degree occupations, this may become more reachable. It can also be helped by upgrading the quality and status of the training given to skilled workmen.

(4) The program should provide students with a comprehensive and flexible program of career-qualifying opportunities--one that will allow students to progress at their own pace and yet will not lock them into a particular track. It should increase the options available at the secondary and postsecondary levels through greater breadth of course offerings, more meaningful content (jobs with a future) and availability of different types of learning modes. Career knowledge that has a high degree of transferability must be emphasized.

(5) The program should provide for greater involvement of employees in the educational experience of all students. Employers can make an important contribution through work-study and cooperative education programs, involvement in occupational guidance, career orientation, and placement activities, and in employer conducted alternatives to be the "in school house" education.

(6) The program should provide students with career counseling that begins early in the educational program and follows through to job placement or further education. While the system should be built on the principle of maximizing individual choice, students should be provided with options that are realistically related to labor market conditions. A job placement function should be located in the schools.

(7) The program should provide opportunity for counseling, for reentry, and retraining for those who have exited the system--both for those who have failed to gain employment and for those in the world of work. Individuals whose skills are no longer marketable, those in dead-end jobs, and those who want a career change for personal happiness should be able to reenter the system.

(8) The program should provide its graduates from the secondary level and each level thereafter with either the skills to enter the world of work or to embark on additional education. Many career options will require education beyond the secondary level, and the system should provide this experience. The criterion should be that at the exit point for each career option the student is qualified to enter that career.

(9) The program should provide students with some notion of what is wrong with the world of work particularly the way jobs are structured. Simply preparing students to accept the occupational system is insufficient.

(10) The program should provide the consumers of Career Education with a role in its design and implementation. If individuals are to gain greater self-autonomy and control over their destiny, it is important they be involved in the planning and development of Career Education.

(11) The program should provide students with credentials that overcome discriminating distinctions both in school and in the society at large. Give credits for vocational courses that are of equal value to those given for college preparatory courses. For those whose work performance qualifies them, give credentials of competitive value for educational or career options. This will require an active role in seeking to change the credentialing procedures for entry into the world of work.

While these are the operational objectives of career education, they also will go far toward meeting other broad educational goals. For example, by increasing and improving occupational knowledge, preparation, counseling, and placement, we will also promote more meaningful career options for all individuals entering the system and particularly for those who presently have the most limited career options. Further, by better matching individual needs to career preparation, we will increase the personal satisfaction individuals derive from their work and this, in turn, will improve their self-esteem and satisfaction with life in general.

Of interest is a recent report on "Work in America" released by the Department of Health, Education, and Welfare which states that, "It might be worthwhile to view school as a workplace, and to understand that the proper precursor to satisfying work is a satisfying education."

Most of you are specialists in curriculum development in vocational-technical education. Some few of you have been designated as specialists in curriculum development in career education. Whatever your orientation, your training, your professional responsibility, your presence here indicates your interest in playing some role in curriculum development in career education. Even those most interested in confining their efforts to the development of curricula for occupational preparation in specific job skills are seeing these efforts in the total context of career education--related to other efforts at developing career awareness and providing for career exploration. In a very real sense, all of you are involved in the engaging task of re-orienting your curriculum efforts in terms of career education. Let me explore some "hows" of this endeavor.

First, most curriculum developers and managers need to raise their consciousness of career education and its basic tenets and the implications of these for curriculum development at preschool, elementary, secondary, postsecondary, and adult levels. This means keeping abreast of the developing literature, research, development, and experimentation in the field. For example, all of you will want to watch the progress of two career education projects funded in '72 under Part I of the Vocational Education Amendments of 1968. As a result of a competitive proposal process, contracts were awarded to Eastern Illinois University for the development of career education curricula K-6 and to the American Institutes of Research for career education curriculum development in a somewhat different model, K-6 and 7-9. One product is already available after only six months--an annotated bibliography on career education prepared by Dr. Marla Peterson and her staff at Eastern Illinois University.

"Consciousness raising" also involves viewing social and economic conditions and problems in terms of their relationship to career education needs and programs. The recently-released HEW report, "Work in America" could provide ammunition for a number of staff seminars on career education needs and means.

Second, there is a need for curriculum developers and managers in one field to get together with those in other fields of endeavor. Fusing, integrating, coordinating, relating general and vocational education are less likely to take place if the vocational educator and the academic educator work in isolation from each other. Happily, some of our recently funded State curriculum laboratories have added curriculum specialists in elementary education to their staffs of vocational education specialists. And, they have devised ways of working with curriculum specialists in areas of communications, mathematics, social studies, and the natural sciences. The marriage of vocational and academic education which is one of the basic concepts of career education is taking place and you are in a position to facilitate, promote, and support connubial bliss! But, just as in all happy marriages, each area will wish to maintain its own integrity.

Third, another need is for more sharing and utilization of the many good career education and related curriculum materials that have been developed. Many such materials have been developed; a number are under development. Most need to be adapted somewhat for use in a local situation.

According to curriculum specialists in the Office of Education, the most glaring weakness of most curriculum development proposals is failure to indicate a knowledge of the state of the art of curriculum development in the area addressed. Did you know that nine agencies of the Federal Government are funding approximately 90 curriculum development projects in only two career areas: marine sciences and allied health? Some of these efforts are quite limited and no overall evaluation of the effectiveness of the curriculum materials has been made. Yet, these numbers are impressive!

Did you know that the Office of Education is funding curriculum development in six occupational cluster areas: transportation, construction, communications and media, public services, manufacturing, and recreation and tourism? Plans call for testing in fiscal '73 of curriculum materials that are being developed in these significant career areas. Did you know that requests for proposals for curriculum development, K-adult, in business and office occupations and distributive education will be issued this spring?

Now in progress at Western Michigan University is a project aimed at determining the implications of the metric system for all occupational fields and the development of curricula to facilitate the change-over. Certainly you will wish to keep in touch with this effort. State of the art studies in curriculum development related to career education of Indians and those in correctional institutions are in progress. These are only a few of the significant curriculum projects funded by the Office of Education and related to national educational priorities.

In order that curriculum materials may be more readily transferred and adapted for a variety of educational settings, let me urge that you give attention to a rigorous testing of such materials and that they be presented in a format that is easily understood. If materials are packaged in such a way as to require two courses in how to use them their general usefulness is limited!

The tools and strategies of curriculum development are becoming more and more complex and more and more likely to contribute to the development of curricula that can make a difference in the behavior of the student. Such meetings as this are essential as a means of learning about newer methods and techniques. I congratulate you on your attendance at these sessions.

Again may I remind you that you have in your hands a means for making career education work! You represent a variety of institutions and a very large number of teachers and students. Your influence can be felt in this new educational thrust.

You are needed to provide leadership in the career education movement. I know that you will be keenly aware of your responsibilities as leaders in career education as you work together this week. I wish you well in your deliberations!

ANALYZING OCCUPATIONS WITH IMPLICATIONS FOR LEARNING

by
Leon Lewis*

I would like to talk to you about occupations, one of the goals of vocational education in training for gainful employment. We, in the Labor Department, attempt to provide vocational education groups in the States with pertinent labor market information on the occupational outlook in an area. There are problems in this activity, many of which are concerned with the concept of what is a job. The concept of what is a job versus an occupation or "work" probably will vary with each person in this room.

We have attempted to catalog all of the legal ways of making a living and have published this information in the Dictionary of Occupational Titles. Cataloged to date are approximately 22,000 different ways of making a living. These 22,000 jobs can be reduced to 14,000 definitions of occupations and jobs. A methodology for obtaining factual information about jobs has been developed called Job Analysis. This methodology is based on an observation and interview technique and has been published in our Handbook for Analyzing Jobs. The handbook has been found useful by research groups, universities, and others as a manual for training and as a textbook.

Techniques of analyzing jobs for various purposes have stood a test of time. We recently came out with a new approach to job analysis embodied in the handbook I mentioned and that is what I would like to discuss with you. Normally, Job Analysis is primarily concerned with the work duties themselves. However, we went a step further and identified those worker trait characteristics that would lead to successful performance on the job. We analyze jobs at the duty and task level. Our Job Analysis technique sometimes is called "Task Analysis." At other times you will hear this identified as "Element Analysis." Lately, in the world of education, there is a new phrase "Performance Objectives." All of these identifications mean the same thing.

One of the problems in dealing with concepts is the use of the English language which has many synonyms with shades of different meanings making consistency of interpretation difficult.

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In an attempt to insure consistency of meaning, we developed a series of slides in an attempt to explain concepts, on the assumption that a picture is worth a thousand words.

(Slides) The subject is Job Analysis. Job Analysis, in addition to its value in curriculum development has its value in recruitment and placement, since knowledge of the job becomes all important. That's not to say that some recruitment doesn't take place without knowing where you are going to put the person in terms of placement. This is one of the problems that exists in industry and government. It is also one of the bases for determining a better utilization of workers in terms of work that has to be actually performed. Job Analysis is the basis of job "restructuring."

For this we developed a methodology based on our Job Analysis technique concerned with job restructuring as a methodology which is being used in a number of categorical programs sponsored by the Federal government in attempting to structure new entry levels for the disadvantaged. It also has input in vocational counseling since vocational counseling is concerned with the world of work. It is not enough to know about a "job area;" one must know something about specifics within the job area.

For training purposes, Job Analysis is a must, because this enables training to take place in terms of specific work activities to be performed. In performance evaluation, it's the basis of evaluating an employee in terms of the work activities rather than on "He doesn't look right; I don't like his personality; and a hundred other subjective factors." In plant safety, it has its primary input in determining where hazards exist in the work activity. In recruitment it enables selecting the worker who is best qualified for the opening. In placement and better utilization of workers, it facilitates matching the individual with the job, utilizing his knowledges, skills and abilities.

For career development, this slide attempts to show starting at the entry level. If one gets on the right escalator in terms of learning job activities, here is the potential for promotion and transfer to a higher level.

As I indicated, job analysis provides the base for job restructuring. It is a rather detailed job analysis that takes place which gets into the level that educators today call Performance Objectives, and sometimes goes down to the "nitty-gritty" of identifying and describing sub-tasks. In vocational counseling, it provides the basis for discussions on educational training, aptitudes, physical capacities, physical demands of jobs, interests, temperaments and related items.

Job Analysis is a basis for determining curriculum content. Job duties are identified with knowledge elements, such as blueprint reading, machine set-up, shop math, or machine operation.

A group of experts could sit around and determine the specifics of a job. We have found in our own experiences that groups of experts tend to set standards of what a job should be, rather than what it is. In that area you can run into a huge conflict concerning the practicality of training for specific vocational objectives. In performance evaluation one has the basis for identifying the workers' actual performance. There could be an award if it is above normal or it could be a dismissal slip if it is below normal. The plant safety job analysis could identify the hazards and also identify the remedial measures that should be taken. For example, when using a grinding wheel, one should use safety goggles or run the risk of an eye hazard.

I thought it might be good if we identified the terms my organization uses and it is within this context that we can then talk about job analysis. An "element" in the job is the smallest part of a work activity. A "task" is one or more elements of an activity in the work performed so interrelated that one cannot be performed without the other. A "position" is a collection of tasks and a total work assignment. A "job" is a group of identical positions. In any given establishment one position could be one job. You could have 14 positions which is one job. For example, if in an organization you have fourteen drafting clerks all doing the same thing, the position is drafting clerk. The job is drafting clerk. There are fourteen drafting clerks on that one job. So the position is really the incumbent or the actual person on the job. A number of positions that are the same equates to the job. In this particular case, four positions are the one job. One of the problems in job analysis is to determine where a job starts and where a job ends. The questions here are where does it end? If you went out to do an actual job analysis, that would be one of your first problems, what is the job? Where does it start? and where does it end?

For the machine operator there is a situation on a job where the individual is concerned with the regular task cycle. The set-up may be done only once, the adjustment once, then from that point on it is a straight operation. However, during the operation, he can go back and readjust.

A professional chemist, in a sense has no regular task cycle. His tasks are really functional. A chemist could get involved in research, analysis, testing, reporting, lecturing, teaching and any one of these areas, in itself, could be a full-time activity. You may well say to yourself, is this a job or not? At this point let me introduce the word "occupation." Many times one job equates to an occupation. In this instance the chemist is an "occupation." Within the occupation there are a number of different jobs; research chemist, analytical chemist, test chemist, editorial chemist and instructor or professor.

Now, let's consider an engine lathe operator. The slide shows three of them doing the same thing, so those are three positions and that is the same as one job. Our next slide shows a situation where we have four positions which are really four jobs. The workers do distinctively different things and they interchange only in an emergency. There is a filling activity, then capping, labeling, and boxing activities to perform. Where the workers rotate or interchange their duties is one job, and where they do not rotate, there are four different jobs.

Now, what does job analysis deal with? It deals with two broad categories of information; one, the actual work that is performed and the other worker traits or the traits required for successful performance on a job. In the work performed area, we have developed a system whereby in describing the job or identifying a task within a job, we deal with worker-functions; work fields; and materials, products, subject matter or services. Thus, for each job in our worker-functions we have developed a system that would relate a job's involvement with data, people, and things. These are concepts. Each of these concepts consist of a hierarchy which has a built in level of complexity. The only one that does not is the people function.

With work fields we are able to identify the machines, tools, equipment and work aids that are specific within the job activities. We can identify materials, products, subject matter or services that are involved in the performance of that job. Put all of this information together and you have an excellent statement of what is the job. What is its level of difficulty? What are the machines, tools and equipment work aids' used? How are they used? And what materials, products, etc., are involved in the performance of the job? On worker traits we have identified what would be significant in the performance of a job. The worker traits are: training time, aptitudes, temperaments, interests, physical demands and environmental conditions. Environmental conditions and working conditions maybe construed as the same.

When we identified training time we also took a good hard look at what was training time and we found that training time is a very tenuous type of item. It is identifiable as two factors, general educational development and specific vocational preparation; in combination, that is training time. Then we took a good look at general educational development, which I refer to as GED. For GED we built our own scale or levels. There is no standard in the school systems in this country. You may take a graduate of the Boston Latin School with its former reputation and it could equate to a junior college graduate in some other part of the country. Or you could take a grammar school graduate in some parts of the country who still can't read or write. If one says eighth grade, that doesn't mean anything. Of course, our scale is meaningful to us and may not be meaningful to anyone else. We recognized that after we released it and subsequently developed a relationship between our GED scale and school coursework. To illustrate, we could say that this GED level equates to elementary fractions, multiplication, and similar math items. In one school system that may be the fifth grade and in another system it maybe the eighth grade. Presently, the GED is composed of three factors; reasoning, math and language development. These three factors in combination are General Education Development. For specific vocational preparation (SVP) we developed another scale. The scale really ties back to the scales developed in World War II for skill critically, deferrments and similar purposes.

On the job side in determining what the worker does in relation to Data People, and Things, we get our primary input in terms of levels of complexity, whether the job is more a mental job or working with concrete items, or a people to people relationship. This is shown as structured worker-functions which are defined. We define what we mean by synthesizing, coordinating, analyzing, compiling, computing, copying and comparing. This is in our new Handbook for Analyzing Jobs. As shown, the higher the code number, the lower the level, and the lower the number the higher the level. Any given level subsumes everything under it, so that if a job is identified as compiling, it subsumes, computing, copying and comparing. The lowest level of complexity in the data function is comparing.

In a relationship of a job to people function, we have arranged it to show identifications as functions as mentoring, negotiating, instructing, supervising, diverting, persuading, speaking-signaling and serving. This is not a hierarchy. If one looks at income, diverting is one of the highest paid activities in the country while among the lower paid are those who are mentoring and those who are involved with instructing. To repeat, the job or worker's involvement with things is not a hierarchy.

However, a job's involvement with the things function is a hierarchy. The highest level is setting-up, their precision working, operating-controlling, driving-operating, manipulating, tending, feeding-offering and finally handling.

The Job Analysis approach also identifies the methodologies and techniques that are involved in a job. There are about 100 work fields which would reflect that. An illustration of some of them are appraising, sawing, boring, and shearing-shaving. The analysis would also identify how the machines, tools, equipment and work aids (MTEWA) are used in the work activity and also determine the materials, product, subject matter and services (MPSMS) that are involved. There are 580 categories for MPSMS.

Now we come to the worker traits. Let us look at general educational development and vocational training. The two in combination are training time. Aptitudes - we developed a technique whereby we can estimate the important aptitudes required in the job. We do not estimate criticality but estimate in terms of job content the important aptitude required to perform the job. In terms of interests and temperaments, identify these in terms of a bi-polar scale in our system.

Under physical demands the technique identifies the demands that a job physically makes on a person. The counter part of that would be a medical examination that would identify the capacity of the individual to perform in terms of those physical demands. For example, if you are teaching somebody how to be a telephone linesman, and the man only has one leg there is no point to it. Or if you are trying to teach somebody to be a speed typist and he or she has two arms amputated, there is no point to that either. Environmental conditions are as important as the physical demands because a lot of industrial jobs have build in hazards. They should be identified so that where appropriate the use of safety equipment, clothing and precautions that a worker has to take could be built into the instructional program.

A form for recording job analysis data was devised. Some analyses may be as much as 30 pages, but as you can see the data are summarized as a job summary. This provides a basis for the job definitions in the Dictionary of Occupational Titles.

The back of the form deals with the requirements for the job in terms of general education, vocational preparation, experience, orientation, licenses, relation to other jobs and workers -- promotion from this job to what, transfer from another job to this and kinds of supervision received. This information normally is secured from the employer. Based on our own scale system, we can then identify more realistic hiring requirements.

That, in a thumbnail sketch, is the approach we use when we do a job analysis. How many analyses of this type do we have? I would say about 250,000. Most of them are now on microfisch. Our collection includes abbreviated analyses and full-blown analyses having as much as 30 pages.

A number of educational groups have contracts on "Core Curriculum Development." We are in a position to accommodate requests for analyses. If you have a need for any of these, I would urge you to write for them. Identify them by the specific Dictionary of Occupational Titles title and a code number because that is the way it's filed. We have done a number of other publications that relate the instructional programs from HEW to specific vocational objectives. We have published comprehensive job description volumes in the health area for those of you concerned with hospitals and related health work. I brought with me the Handbook for Analyzing Jobs and a handout on other publications from my Division which would be of potential interest to you.

This completes my scheduled time. I hope you have a rewarding time at the Institute. Thank you.

CURRICULUM DESIGN

APPROACHES TO VOCATIONAL EDUCATION CURRICULUM

by
Patrick J. Weagraff*

INTRODUCTION

Since I have been asked to devote a major part of my remarks today to the subject of approaches to vocational-technical curriculum, it seems appropriate to begin by mentioning that I find these institutes are most timely and needed by many in our field. In less than ten years we have witnessed many changes in vocational education. From educational offerings of rather narrowly defined programs serving a relatively small number of students to the emerging broad concept of career education for all, makes institutes such as this one essential.

The subject of this presentation is an absorbing topic lately within the U.S. Office of Education, in state departments of education, and certainly in numerous colleges and universities. In essence many of us in vocational education are attempting to answer a very large question: what is right and what is wrong with the vocational curriculum and what can be done to build on our strengths and eliminate our weaknesses?

Because the question is a very broad one, this presentation has had to focus on specific aspects in an attempt to provide you with improved skills in vocational education curriculum work. Accordingly, this presentation is divided into two broad parts.

TRANSPARENCY #1

ORGANIZATION OF PRESENTATION

1. Various approaches to vocational curriculum
2. Guidelines to follow in the preparation of vocational education curriculum and instructional products

VARIOUS APPROACHES TO VOCATIONAL EDUCATION CURRICULUM

There are at least four major approaches to curriculum which can be used in the practical arts or vocational education.

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They are: (1) a broad fields approach; (2) subject centered approach; (3) a core approach, or (4) an eclectic approach.

TRANSPARENCY #2

APPROACHES TO CURRICULUM

BROAD FIELDS

CORE APPROACH

SUBJECT CENTERED

ECLECTIC APPROACH

Our field has relied almost exclusively on a subject centered approach. To some extent this has been due to what I choose to call "historical determinism." Or simply stated, a historical background which is the principle source of current programs. To further introduce this point, let me expand on it slightly more. Many of our vocational programs are rooted in legislation such as the Smith-Hughes Act, George-Barden Act, or the George-Dean Act. These pieces of legislation established a subject centered curriculum for vocational education.

Vocational education legislation passed in 1963 and 1968 were not subject centered. These acts might best be described as "people orientated." Their concern was one of providing vocational education programs to more people of varying ages and in all geographic areas of our country. The consequence has been a shift from a subject centered curriculum to other approaches.

A significant spin-off of this shift from a subject centered curriculum has been the emergence of occupational cluster systems as a base for curriculum building in vocational education.

CLUSTER APPROACH

The cluster concept is an organizational approach which is directed toward the preparation of individuals with skills, knowledges, and attitudes required for job entry into a family or cluster of occupations. Its basic premise is the development of individuals with job entry capabilities for a number of related occupations rather than indepth preparation for a specific single occupation.

The cluster concept approach to organization of content and instruction differs from conventional organizational approaches in terms of scope and depth. The typical vocational education program, for example, is found at the secondary level and is designed to prepare an individual extensively for a specific occupation such as carpentry, masonry, or plumbing. The cluster concept as it has emerged in career education provides an individual with early awareness and exploratory learning opportunities culminating in the development of job entry competencies for several occupations found within an occupational cluster such as construction. The cluster approach does not purport to produce a highly skilled craftsman but job entry competencies for a number of related occupations.

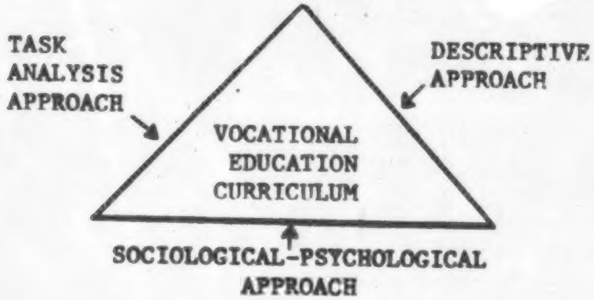
AN OVERVIEW OF PAST CLUSTER SYSTEMS

The term cluster while still in a state of evolution has taken on a variety of meanings. It may refer to a simple grouping of seemingly like jobs, to broad institutional groups such as transportation, manufacturing or public service, to groups based on similar job products, to groupings based on analysis of work tasks, and so on.

Much work has been completed during the past twelve years to find methods to develop clusters. In general, such work may be grouped into three broad approaches. They are: descriptive approaches, task-analysis approaches, and sociological/psychological approaches.

TRANSPARENCY #3

CONCEPTS OF CLUSTERING


TASK ANALYSIS APPROACH
DESCRIPTIVE APPROACH
VOCATIONAL EDUCATION CURRICULUM
SOCIOLOGICAL-PSYCHOLOGICAL APPROACH

It is notable that all three methods are valid, usable and in almost every instance meet the needs of the organization concerned with their development. However, the clusters are not clear or unmixed groupings. Like the clusters or families they cover, they possess many inconsistencies, mixed categories, and blank spaces.

Descriptive Approaches. Educational workers generally have been interested in categories that relate heavily to teacher and student training, that reflect job categories as they presently exist, and that are readily adapted to current vocational and technical curricula, staff, equipment, and guidance facilities. Although these systems may include consideration of student skill, knowledge, attitudes, and other personal characteristics, they are primarily based upon an informational approach to occupational areas or families rather than on analysis and synthesis of broad job needs and their relationship to student characteristics.

Such systems are intended for employment market information and vocational guidance and are exemplified by a joint publication of the U.S. Department of Labor, and Health, Education, and Welfare, entitled Vocational Education and Occupations or by various Department of Labor publications, such as the Occupational Outlook Handbook and like publications. To a certain degree, the very complete draft of 15 occupational clusters developed by the Division of Vocational and Technical Education of the USOE falls into this descriptive approach, although its implications are considerably broader.

Sociological-Psychological Approaches. A second broad class of systems comes from psychologists and sociologists interested in various aspects of worker characteristics as these relate to life styles and occupational choices. A great range of personal attributes, such as job satisfaction, mobility, personality traits, work attitudes, personal value systems, vocational interests, and the interaction of total life style and work, have been studied. Much has been written on such variables as status, leadership, and work performance.

In an attempt to systematize these wide-ranging variables, some writers--Roe, Super, and others--have developed one-, two-, or three-dimensional matrices of occupational families arranged in order of vertical (status) and horizontal (occupational areas) position. The Dictionary of Occupational Titles (DOT) represents a mammoth categorization that handles the several variables of status, occupational family, worker characteristics, and working function (i.e., emphasis on people, data, or things). Robinson, Athanasiou, and Head have performed a detailed and valuable task in attempting to describe and draw together some of the many approaches. They themselves outline a simplified method of coding occupations in a listing that combines status and occupational area characteristics.

Task-Analytic Approaches. The development in recent years of two approaches to occupational training results in another means of classifying job or occupational characteristics.

The first is typified by Smith's work in which he described methods for analyzing job and task needs and requirements and for carrying these job-functional characteristics back to the training site for the purpose of defining training objectives, means, and equipment in preparing workers or students for specific jobs or job families. This approach led to emphasis on highly functional preparation, fixed mastery levels, variable training-time schedules and other properties of a job-function approach to training.

The second approach is that of Maley in utilizing the Smith or similar rationale to study the common task requirements and characteristics of a wide range of skill families. The combined outcome has been: a renewed consideration of actual task requirements based upon behaviors or actions of persons doing the task; training schemes based upon total job-functional characteristics; recognition and development of functional similarities relating jobs and job families; recognition and development of underlying functional skills and knowledges that are common to several jobs or job groupings.

One of the most obvious difficulties confronting curriculum work by local administrators or teachers concerning clustering is deciding which type of cluster approach should be used. In the end, there is always a judgmental factor, selecting one of the three approaches which best meets local needs. I do not want to suggest there is or should be a single approach. Rather, the problem is deciding what criteria the cluster must account for and still remain feasible in a specific situation.

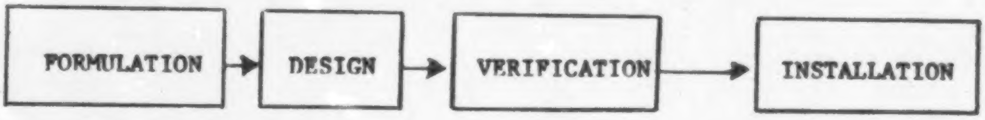
CURRICULUM DEVELOPMENT PROCESS

The last segment of my presentation today deals with guidelines for developing vocational instructional products or curriculum. The rules should in no sense be regarded as mandatory, but may be of use to those who have not already learned the rules "the hard way."

For presentation purposes, the rules are organized under categories denoting components of the curriculum development process: formulation, design, verification and installation.

TRANSPARENCY #4

CURRICULUM DEVELOPMENT PROCESS



Formulation involves identification of knowledge, skills and attitudes to be taught. Design entails preparation of prototype materials and procedures considered most likely to achieve these outcomes. Verification includes the field testing of prototype products to determine the extent to which they assist learners in achieving outcomes, and the revision of prototypes until objectives are attained. Installation consists of providing for efficient administration of products in schools. Although some rules apply to more than one category, they are classified under the heading considered most appropriate.

FORMULATION RULES

TRANSPARENCY #5

FORMULATION RULES

1. State curricula outcomes in terms of learner behavior
2. Base program on empirical evidence
3. Use the needed approach, not the one which we are most comfortable with
4. Limit research time

Rule One -- State product outcomes in terms of learner behavior, the conditions under which the behavior is to occur and standards of acceptable performance. Comprehensive specification of outcomes provides an unambiguous criterion for judging product success. Writing test items to measure objectives at the same time objectives are constructed helps further define outcomes and insures early development of an instrument to measure behavioral goals.

Rule Two -- Gather empirical evidence to determine knowledge, skills and attitudes to be taught. Data should indicate their usefulness outside the classroom, even if the data is only a consensus that certain behaviors are important. Other research, such as word count studies to delimit vocabulary for reading programs, can also be conducted. In addition, the population of learners for whom the product is being developed should be preassessed. A diagnostic pretest, whose items are based on program objectives, will provide information necessary to determine the scope and sequence of objectives and entering behaviors of particular student populations.

Rule Three -- Select the curriculum approach based on student need rather than the approach with which teachers are comfortable. If a broad fields approach is required, use it--don't feel all vocational work has to be grounded in job analysis to be valid.

Rule Four -- Limit research time. Development work in vocational education can ground-work their way into oblivion. Existing research, even if incomplete, is often sufficient for beginning development of a curriculum. Additional research data can be obtained as a program is being designed and tested. This information can be employed when making curriculum revisions.

DESIGN RULES

TRANSPARENCY #6

DESIGN RULES

1. Provide all materials and procedures required
2. Build in established instructional principles
3. Develop alternative procedures
4. Free programs of cultural biases
5. Give explicit instructions

Rule One -- Provide all materials and procedures essential for attainment of curriculum objectives. Teacher preparation of materials cannot be assumed. Tests should also be provided, because measures of outcomes are often inadequate or invalid when constructed by persons other than the product developers.

Rule Two -- Build established instructional principles into product design. Materials should be made that do more than merely present information. Many educators and psychologists have described characteristics of effective instruction. Strive to design a curriculum which will:

Control learner attention

Provide for learner motivation

Stimulate learner recall of information

Deal with the real world of work

Require participation of learners

Provide immediate feedback

Provide for transfer and generalization

Rule Three -- Develop alternative teaching procedures. Merely repeating the same instruction when learners fail to achieve objectives inadequately provides for individual differences. When curriculum is designed for classroom use, provide auxiliary materials that can be used by students individually, or with the assistance of teacher aides, older students and parents.

Rule Four -- Free materials from hidden cultural biases and discriminations. Some programs, like those teaching foreign languages, may relate to particular cultures, while other programs, like those teaching science and mathematics, may not. Using theme characters and examples from a variety of cultures or restricting exemplars to objects familiar to learners with diverse culture backgrounds are ways to reduce subtle discriminations. Multi-ethnic development teams and cultural consultants can reduce cultural imbalance.

Rule Five -- Give explicit directions to production personnel (particularly if they do not have classroom experience as a vocational teacher). Write precise descriptions of how prototype materials should be constructed, and include drawings when appropriate. Meeting frequently with production personnel as prototypes are being constructed, requiring single copies of prototypes for review before mass production begins, and placing production personnel and those who design prototypes in close physical proximity will further reduce the possibility that prototypes will be appreciably different than intended by designers.

VERIFICATION RULES

TRANSPARENCY #7

VERIFICATION RULES

1. Obtain information in addition to pretest and post test data
2. Try out curricula first
3. Evaluate measuring instruments
4. Collect more information than you think you need
5. Work with teaching staff

6. Encourage constructive criticism

7. Don't detract from program effectiveness by too much testing

8. Encourage teachers to fill the voids

9. Schedule tryouts effectively

Rule One — Obtain information in addition to pretest and post test results. Curriculum verification involves pretesting a population of learners to determine their knowledge of product outcomes, trying out the product, and post testing the population to determine the degree to which the produce promoted improvement in learner performance. Comparisons of performance on these tests identify weak program components, but fail to reveal the reasons why they are weak. Instruments such as interviews, observations, questionnaires and scales can be used to obtain these additional data from students and teachers.

Rule Two — Try out the curriculum or instructional products on individual learners and classes as materials are being designed. Data from early tryouts can be used for revising materials before beginning expensive mass production for more extensive field trials.

Rule Three -- Evaluate measuring instruments. Poor tests can yield inaccurate data. Observing students as they take exams and interviewing learners to obtain their reaction to tests can help determine whether data reflect the condition of the product or weak assessment instruments.

Rule Four — Collect more information than initially thought necessary for making revisions. Turning back the clock on a tryout is impossible. Data collection can be cut back after the first tryout of a curriculum has enabled identification of information most useful for making improvements.

Rule Five -- Make sure teachers and learners associated with field trials understand they are not being evaluated. Care should be taken not to make comments that can be construed as judgments of their performance. Frequently ask teachers and learners for suggestions about how the program can be improved.

Rule Six -- Encourage constructive criticism. When honest comments about a curriculum's shortcomings are accepted in a positive manner, teachers and learners involved with field trials are more likely to describe the weaknesses they perceive in a program. These comments can be used to remedy weaknesses.

Rule Seven -- Curtail collection efforts that detract from program effectiveness. Often students and teachers are required to keep voluminous records and undergo so many tests they they are unable to devote sufficient time to learning and instruction. When extensive information is necessary, obtain it by randomly sampling some members involved in the tryout. In this way, few members of the tryout population are affected by disruptive measurement techniques, and field results are less likely to be contaminated.

Rule Eight -- Encourage teachers to develop alternative instructional procedures when those provided by the program fail. This is especially true during the first field trial, when there is a lower probability of a program's success. Care should be taken to document these procedures for possible incorporation in product revisions.

Rule Nine -- Schedule tryouts sometime is adequate for making revisions between field trials. If tryouts need to correspond with school years, the revision process must be managed so modifications are made on time.

TRANSPARENCY #8

INSTALLATION RULES

1. Test under actual conditions
2. Design programs to require minimal mechanical and logistical support
3. Build teachers "into" the program
4. Furnish teacher training materials
5. Provide transition to other curricular areas

Rule One -- Test programs under the conditions in which they will be used. Products developed for general school use should be tried out in schools and used by regular school teachers during development.

Rule Two -- Design programs so they require minimal amounts of mechanical and logistical support. Materials that require simultaneous operation of three projectors or applications of computers are not likely to be in demand by schools because equipment costs would be prohibitive.

Rule Three -- Build teacher behavior into programs. This can be done by simplifying procedures for a program's administration. When procedures are simplified, teachers are more likely to use products correctly. Some techniques for making teacher administration of programs easier are:

Design materials so minimal directions are required

Make teachers' manuals as small as possible

Avoid new terms and jargon

Rule Four -- Furnish teacher-training materials. These increase the likelihood that products will be administered as intended by developers. When training materials are self-instructional, the training of personnel to teach others how to administer a program is no longer necessary. Training materials should be field tested and revised along with other program components.

Rule Five -- Provide transition to other curricular areas and grades. A ninth-grade career orientation program should relate to those in the seventh and tenth grades, particularly when materials used in those grades have been developed by others. Materials should be developed to insure that learners can proceed from various programs within a curriculum with ease.

CONCLUSION

One could, of course, list further rules. It would be unprofitable to do so. The point I have been trying to make should be clearly demonstrated. There are several valid approaches and rules which can be used in vocational curriculum work. If you do not have prior experience, I would strongly suggest you start to apply some of the rules to a specific approach.

Melvin Barlow, a former professor of mine, recently spoke of the curse of neophobia. He indicated that neophobia -- the fear of anything new -- will plague work in our field. While this is undoubtedly true, we must accept the fact change is required if we are to effectively and efficiently meet the challenges facing the vocational education program.

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EXPLORING CURRICULUM TASKS AND GUIDELINES IN RELATION TO CAREER EDUCATION

by
Henry J. Hermanowicz*

Long after he passed away, I can still remember the advice that my father, a Polish immigrant to the United States who never completed his elementary education until age sixty-five, gave me as a boy in grade school. He advised me to get as much education as I could including a college degree so that "I wouldn't have to work for a living." Of course, he meant so that I wouldn't have to work at hard physical labor, but his message still conveys some of the popular prejudices that exist about the world of work. I took his advice and exceeded all of his expectations for longevity in education. I became a college professor and later a dean. Today, some of my colleagues would insist that I have followed my father's advice literally.

This true anecdote caused me to reflect upon many concerns I have with respect to occupational activity and formal education. There seems to be an unfortunate but pervasive attitude in American culture suggesting that basically a person must work in order to obtain the resources to provide for himself and his family and to pursue his recreational interests. One's work or career was not to be enjoyed but to be endured. Formal education was to be pursued as a credentialing and social stratification process enabling one to acquire a position less distasteful than what would be available with less schooling. Thus, we have created an army of position-seekers with little or no actual career commitment whose education offered minimal relevance to their occupation. To be sure, man does not live by an occupation alone, but it is tragic not to recognize that a substantial portion of his life is taken up by his vocation. It seems that we educators have intensified this problem by dichotomizing academic and vocational education and assigning less respectability to the latter. Furthermore, we have planned programs and educated people with little attention to their subsequent employability and the manpower needs of society. I take it that these are some of the problems that the newer developments in career education are attempting to resolve.[1]

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My task in this presentation is threefold:

A. To tell you what I think is the emerging nature of "career education,"
B. To describe major tasks or components of curriculum development,
C. To provide some illustrations or examples of curriculum guidelines that may be helpful to your work in curriculum planning.

THE NATURE OF CAREER EDUCATION

There seem to be no clear stipulative definitions of career education in the professional literature. However, we are finding some general propositions commonly identified with career education. For the purposes of this discussion, let us assume that career education involves the following:

1. Providing fundamental understanding of the nature, complexity, and dynamics of major occupational fields within a societal-cultural context,
2. Cultivating positive attitudes toward the world of work and the human satisfaction that can be derived from an occupation,
3. Fostering greater self-realization of individuals by relating their abilities and interests to career exploration and development,
4. Developing individual propensity for wise career decisions over a lifetime based upon realistic assessment of personal abilities, interests, and goals as related to occupational opportunities and needed preparation or retraining,

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[1] Special thanks is given to Dean Charles B. Porter, a respected colleague and friend at Illinois State University, who generously supplied me with pertinent literature and counsel to reduce the substantial naivete I brought to matters of career education as a curriculum generalist.

5. Providing opportunities for the development of general occupational competencies compatible to each individual's abilities and goals.[2]

Career education thus conceived would have program implications ranging from the elementary school through continuing adult education. Furthermore, career education thus conceived would require cooperative ventures between the school and the larger community including business and industry. In addition, career education so conceived would have to be planned with a responsiveness to the changing manpower needs of the region and nation. The broad program structure of career education would be somewhat as depicted on the chart which follows:

MAJOR TASKS IN CURRICULUM DEVELOPMENT

A number of individuals have attempted to identify the major tasks or ingredients of curriculum development. For example, the late Hilda Taba described curriculum development in terms of the following major tasks:

1. Diagnosing educational needs,
2. Formulating objectives,
3. Selecting appropriate content,
4. Organizing the content,
5. Selecting learning experiences,
6. Organizing learning experiences,
7. Determining the ways and means of evaluating the effectiveness of what is taught.[3]

Robert Gagné, on the other hand, provides a much narrower conception of curriculum defined as "a sequence of content units arranged in such a way that the learning of each unit may be accomplished as a single act provided the capabilities described by specific prior units (in the sequence) have already been mastered by the learner." From this definition of curriculum, Gagné

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[2] There are a number of descriptive statements regarding the essential nature of career education. An excellent summary of such statements as well as background information is provided in: Edwin L. Herr, Review and Synthesis of Foundations in Career Education. (Columbus, Ohio: The Center for Vocational and Technical Education, The Ohio State University, March, 1972.)

[3] Hilda Taba, Curriculum Development: Theory and Practice. (New York: Harcourt, Brace, and World, 1962), p. 12.

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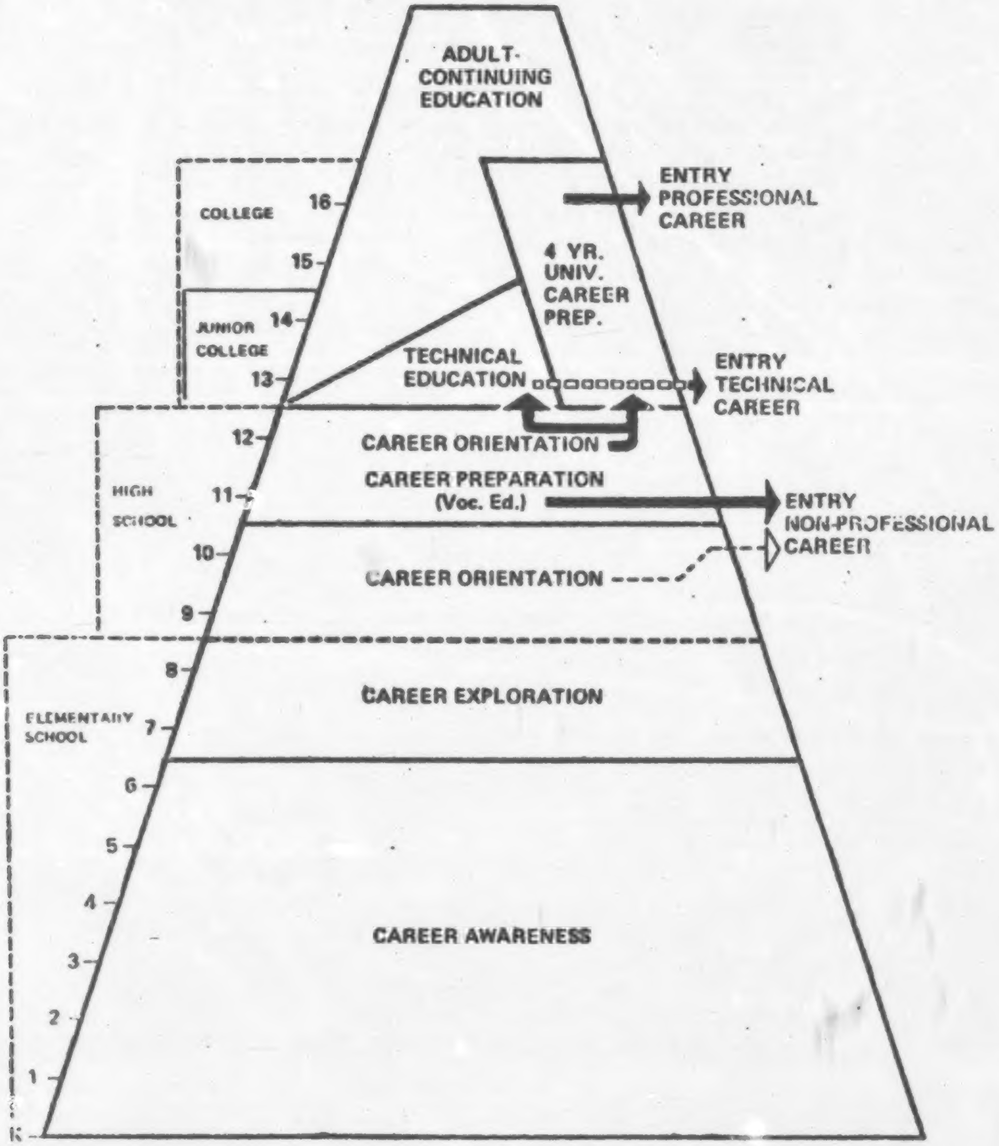
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CAREER PREPARATION (Voc. Ed.)
ENTRY NON-PROFESSIONAL CAREER
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CAREER EXPLORATION
CAREER AWARENESS

Career Education
ILLINOIS MODEL

indicates that the major curriculum development tasks are:

1. Stating terminal objectives,
2. Describing the sequence of prerequisite capabilities,
3. Identifying the initial capabilities assumed to be possessed by the students.[4]

Gagné's behavioristic-content model of curriculum design has been employed in the rather successful AAAS elementary school project "Science--A Process Approach."

For over three decades, the ways of analyzing and describing curriculum development have been dominated by what has been called the "Tylerian Rationale." This rationale was developed originally in 1936 by Ralph Tyler as part of his work with the eight-year study. The rationale later was modified as a result of its use in a seven-year project devoted to the improvement of collegiate general education in some twenty-two colleges. In 1950, the rationale was outlined by Dr. Tyler as the syllabus for the curriculum course which he taught at the University of Chicago.

Tyler's syllabus, which has become a classic in curriculum literature, begins with identifying four questions which allegedly must be answered in developing any plan of instruction.

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained?[5]

Each one of these questions is examined and an explanation is given of procedures by which the questions can be answered. The questions and the proposed procedures for answering the questions becomes the rationale offered by Tyler for not only developing curriculum but also for viewing curriculum as a field of inquiry.

The Tyler syllabus provides a number of rules, principles, or suggestions for dealing with the four questions initially identified as fundamental to curriculum development. Taba also offers various rules, principles, or suggestions for effectively dealing with the major curriculum tasks and so does Gagné. These rules, principles, and suggestions usually take the form of prescriptive statements or conditions indicating how the tasks should be dealt with if a sound curriculum is to be the end result. It is such prescriptive statements that I believe most people are looking for when they talk about "curriculum guidelines." Thus, I would regard a guideline as a condition to be met or a prescriptive statement designed to direct, regulate, or influence the way we deal with curriculum development.

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[4] Ralph Tyler, Robert Gagné, and Michael Scriven, Perspectives of Curriculum Evaluation. (Chicago: Rand McNally & Company, 1967), p. 23.

[5] Ralph Tyler, Basic Principles of Curriculum and Instruction. (Chicago: The University of Chicago Press, 1950), pp. 1-2.

Regardless of how we wish to perceive the major tasks of curriculum development, educational programs or proposed programs can be characterized by their purposes, their content, their instructional material and strategies, their overall organization, and the changes they purport to bring about. Let us assume that the major tasks involved in curriculum development are the following:

1. The identification and description of the objectives of the program,
2. The selection of content considered most significant and appropriate to the attainment of the objectives,
3. The translation of the content into instructional strategies and potential learning situations,
4. The organization of the instructional strategies and learning situations into an overall pattern,
5. Acquiring evaluative data relevent to the internal objectives of the program as well as external assessment of the program itself.

SOME ILLUSTRATIVE GUIDELINES

At this juncture, let's explore some illustrative guidelines in conjunction with curriculum tasks. Three interrelated kinds of guidelines seem to be needed in curriculum planning projects:

A. Broad clarification or delineation of the area or field of possible curriculum development (i.e., the nature of career education and the role of certain fields such as vocational education in career education programs),
B. Basic conditions that should be met for any acceptable curriculum proposal in career education:
   e.g., 1. Any program proposal should include:
      a. A description of objectives,

b. Criteria for selection of content,
c. Proposed instructional strategies,
d. An outline of its organizational pattern,
e. A plan of evaluation.

e.g., 2. There should be a broad base of participation in formulating the proposal including experts in content fields, curriculum generalists, experts in vocational education, guidance experts, instructional technology experts, psychometricians, practicing teachers, and students.

C. Suggested qualities, conditions or procedures for dealing with the curriculum tasks would be a third level of "guidelines."

In terms of the latter, each one of the curriculum tasks could be pursued by considering certain conditions or perscriptive statements serving the purpose of guidelines. The guidelines may be useful or ineffectual. They may be derived from a base of valid knowledge or invented from practical experience. They are invariably suggestive of values held as desirable or functional in dealing with the curriculum task. To illustrate, let's take four of the tasks and consider some possible guidelines.

Objectives

The goals or objectives of any educational program represent expressions of attitudes, preferences, or values. In listing the objectives of a program, we are generally told not to render them functionless by making them too broad, flowery, or ambiguous. Furthermore, we are asked to establish some degree of priority for the objectives so that we can tell which ones are regarded as most significant in the enterprise. In addition, it is generally suggested that the objectives be stated in illustrative student behavior clearly indicating expected performance. In addition, the objectives may be stated with some attention to standards, i.e., the desired level of performance anticipated as an outcome of the program.

What I have given you are some guidelines with respect to the formulation of educational objectives for a program. Simply stated, these are nonambiguity, priority identification, specification in behavioral terms, and performance standards. Other prescriptions encountered in curriculum literature suggest that appropriate attention be given to affective and psychomotor objectives rather than exclusive concentration on those of a cognitive nature. Furthermore, we are advised to specify objectives covering a range of learning and performance sophistication versus preoccupation with the simplest forms of knowledge, attitude, and skill development.

Content

In analyzing knowledge for purposes of curriculum development, we are confronted with problems that have defied satisfactory answers. We are still asking Herbert Spencer's question, "What knowledge is of most worth?" Knowledge forms are pluralistic rather than monolithic and they rest on different foundations of validation. For example, we can talk about ethical, aesthetic, empirical, and logical foundations of knowledge. However, any one field or discipline usually contains each of these different forms of knowing. Furthermore, there are distinctive elements of knowledge within each field that we generally identify as individual facts, concepts, general facts, and theories. Individual facts are regarded as the least significant and most perishable form of knowledge to teach students. While an individual fact attempts to convey knowledge about the world, it is not a statement conveying regularity, replication, or recurrence of the phenomenon to which it is addressed. For example, "There were 'X' registered Democrats in Rochester, New York, in November of 1968." "There are 'Y' bloodcells in this particular blood sample." "In the presidential midterm elections of 1938, the Republicans gained 81 seats in the House, eight in the Senate, and fifteen state governorships." Such individual facts are considered trivial unless they are connected with other facts.

A concept on the other hand is a word or word combine whose definition involves a set of relationships, characteristics, or categories of phenomena. A concept may denote characteristics of physical things such as "hydrogen" or "isomorphic rock"; or the concept may even denote characteristics of societies, such as "totalitarianism" or "corporate enterprise." The concepts of a given field usually distinguish it from another field although there are no neat boundaries separating man-made fields of knowledge. Concepts are invented by scholars in their various fields of study as a means of giving system or order to the phenomena being examined. Because concepts are the fundamental cognitive building blocks by which we order and try to understand all types of phenomena, it is generally assumed that they will represent the basic substance appropriated for instructional content. However, not all concepts are equally useful or important. Concepts are said to be meaningful and significant. They are meaningful if they have adequate understandable referents, i.e., if they are defined with comprehensible characteristics and word substitutes. Concepts are significant if they are connected with other concepts, i.e., if they enter into generalizations or general facts.

A general fact is a connection of individual facts or a statement indicating that all things having a certain characteristic also have another. To put it in other words, whenever we have an instance of one concept we always have an instance of another. For example, "Every time you have a right triangle, the sum of the squares of its legs will equal the square of its hypotenuse." "Bad money drives out good." Such general facts are attempts to express the discovery of regularities and therefore are often called laws. General facts may lead to the construction of theories. A theory in scientific knowledge is a deductively connected set of laws. In other words, a theory involves systematic relationship between a number of generalizations and it can be verified by tests of experience besides having the power of observational predictiveness.[6]

To oversimplify the matter, we are advised to build curriculum content largely on the more significant concepts in a field or fields and their relationships to each other. But another guideline for content selection is the general social utility of the knowledge, i.e., how the knowledge has potential application in a wide variety of situations individuals face in life. In the case of programs for career education, content selection guidelines would prescribe the appropriation of significant, socially utilitarian concepts and generalizations from a variety of fields as such content appears functionally germane to the program objectives.

Learning Situations

The translation of content into instructional strategies and potential learning situations is an extremely complex task. It begs such questions as, how will instructional technology be used in the program? Do some of the objectives and content lend themselves to effective development and use of autoinstructional materials? What content is best emphasized through inquiry strategies? What learning outcomes are best pursued through tutorial or seminar sessions? What outcomes require direct experience in the community, business, industry? Where and how should simulation or games strategies be used?

In his curriculum syllabus, Tyler cited a number of "principles" or guidelines suggested for organizing learning experiences. For example, "For a given objective to be attained, a student must have experiences that give him an opportunity to practice the kind of behavior implied by the objective." "Learning experiences must be such that the student obtains satisfactions from carrying on the kind of behavior implied by the objectives." "Reactions desired in the experience are within the range of possibility for the students involved."[7] These prescriptions stated in other words are meaningful practice, positive reinforcement, and readiness assessment. Another type of guideline that may be stipulated is that all instructional strategies must involve field testing in actual situations as a test of their practical usefulness.

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[6] May Brodbeck, "Logic and Scientific Method in Research on Teaching," in N. L. Gage (Ed.), Handbook of Research on Teaching. (Chicago: Rand McNally & Company, 1963), pp. 44-93.

Organization

Organizing the instructional strategies and learning situations into an overall pattern involves a variety of considerations. A prescription found in curriculum literature and repopularized by Jerome Bruner is the notion of a "spiral curriculum."[8] This notion suggests that more sophisticated treatment and reenforcement of fundamental concepts be systematically emphasized in the program progressing from one instructional level to the next. Tyler, on the other hand, described three major criteria or guidelines to be considered for effective organization that are still part of our conventional wisdom. These were: continuity, sequence, and integration.[9] Continuity simply refers to "vertical reiteration" of major curriculum content. In short, there should be planned reoccurrence of the teaching of certain content and skills. Sequence involves an emphasis analogous to what was previously described as the "spiral curriculum." This is provision for cumulative development of concepts, skills, or attitudes with greater breadth and depth. Integration, on the other hand, is a prescription for building planned relationships between what is taught in one field to another field so that the student can see a broader application of the content and skills he is learning.

I suspect that this tour of curriculum tasks and guidelines has raised more questions than it has provided answers. Nevertheless, I hope the questions help clarify the difficult job ahead. How best can we design, organize, and implement programs in career education that will make significant contributions to the lives of children, youth, and adults are empirical questions that have no simple or final answers. The questions will demand the best talents we have available. But it should be professionally exciting to see what can be done.

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[7] Ralph Tyler, op. cit., pp. 42-43.

[8] Jerome Bruner, The Process of Education. (Cambridge: Harvard University Press, 1960), pp. 52-54.

[9] Ralph Tyler, op. cit., p. 55.

CURRICULUM OBJECTIVES

DEVELOPING HIERARCHIES OF OBJECTIVES FOR VOCATIONAL EDUCATION CURRICULUM AND MANAGEMENT

by
Patrick J. Weagraff*

INTRODUCTION

Have you ever heard a person say anything like the following:

I wish my staff knew more about the relationship of objectives to goals,

I wish our performance objectives didn't deal with such trivial things,

How does what we are trying to do relate to the goals of our organization?

Sometimes it seems we waste a lot of time writing objectives for programs.

I feel certain that you have heard such statements many times and you may have reiterated them yourself on occasion. If you believe, as I do, these statements represent some clues to the problems of working with hierarchies of objectives, then you should be interested in this presentation.

My remarks today can be grouped into three broad categories. First, in bold brush strokes I will review the dilemma of the instructional objective. Second, we will look at types of objectives and how hierarchies can be developed. Last, we will look at the implications of using hierarchies of objectives.

PARADOX OF INSTRUCTIONAL OBJECTIVES

It is indeed paradoxical that a field which has spent untold amounts of money on instructional objectives should be so mired in controversy concerning their use.

In the early 1960's, with a wave of systems approaches to education upon us, many people started to use instructional objectives which contained "some degree" of measurability. In general this was good for education. With measurable objectives we were able to measure progress in a program, as well as conduct instruction in a more effective and efficient way.

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The practice of using complex objectives to plan and control programs was used by a variety of agencies. Our nation's objective to land a man on the moon and return him safely is probably the best example that can be cited. That single measurable objective resulted in literally thousands of subobjectives that ultimately guided the activities of literally hundreds of thousands of workers to achieve program success.

Use of measurable objectives also had a number of negative results. The early leadership in the use of measurable objectives were strong advocates of programmed instructional materials. Because programmed instruction deals with "small bits" of information the use of measurable objectives usually was associated with small tasks.

Recognizing the danger of citing personal experiences, I would like to recall an incident which occurred nine years ago. As Curriculum Director in a large Job Corps Center my staff and I were involved in formulating "terminal performance objectives" for a numer of occupational areas. We called on Dr. Robert Mager to assist us with our task. After a great deal of effort, time, and money was spent we developed over four thousand such objectives. Two years ago I had occasion to talk to Dr. Mager again. Reminiscing, he indicated we made the "mistake of minutia." Or simply stated, we were too precise and parsimonious in our work. In fact, Dr. Mager suggested the appropriate number of instructional objectives for a three-year doctoral program would probably not number more than twenty-five.

An additional problem has been the many overlapping and synonymous terms which grew out of this period.

TRANSPARENCY #1

OVERLAP OF TERMS

GOALS

TPO'S

BEHAVIORAL OBJECTIVES

OPERATIONAL OBJECTIVES

INSTRUCTIONAL OBJECTIVES

PERFORMANCE OBJECTIVES

TERMINAL OBJECTIVES

Although these terms suggest various things and types of application, they share the common quality of measurability.

The point I wish to make should be clear. While measurable objectives are usable and appropriate in vocational education or in any educational endeavor, they have been grossly misused.

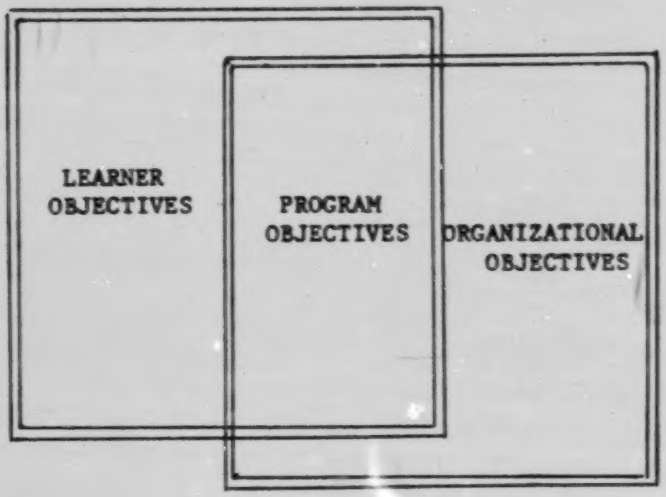
TYPES OF OBJECTIVES

No matter how sophisticated we become in writing objectives, the technique will not be useful unless measurable objectives are used at most levels within instructional programs. In the case of the Apollo Program, the participation of over half million people was required during the nine year period. Coordination of such activity does not come about without careful attention to the interrelatedness of objectives for the many people within an organization. In instructional programs, objectives must also be interrelated and coordinated if we wish to assure quality results.

In order to coordinate the various objectives within the total instructional program, it's useful to think of them as being of three types or categories. The terminology to follow is offered as a simple classification scheme for organizing a program-wide effort in refining objectives. Without such classification, the efforts of the many people required can easily become misdirected and overlapping, thus causing unnecessary waste of human resource.

TRANSPARENCY #2

THREE TYPES OF OBJECTIVES



Most of the examples that you dealt with to this point have been objectives for the learner. They describe a prediction that post instructional attitude, competency, performance, or ability of learners resulted from their experiences in the instruction. This major category is referred to as learner objectives.

Equally important are those objectives which guide the staff of an instructional program in their role as members of the overall organization. Objectives in this category describe predicted, measurable accomplishments of the organization as a whole, or of units within that whole. This group of objectives will be called organizational objectives.

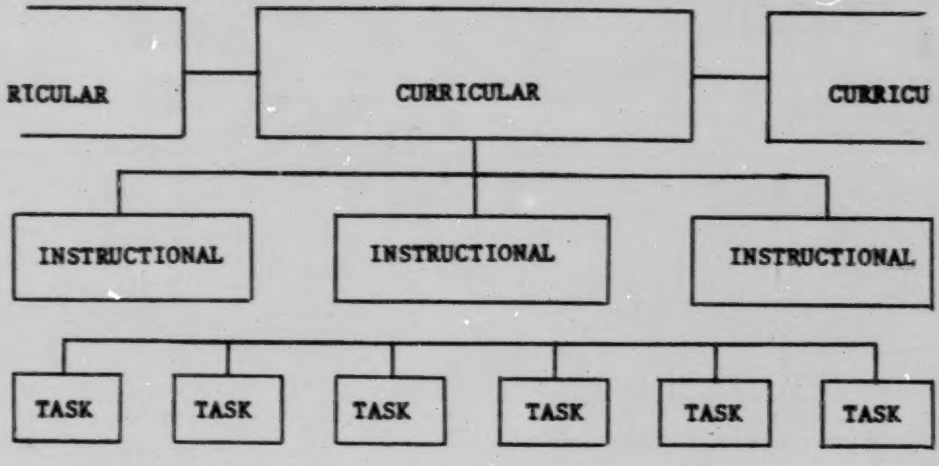
In addition to learner and organizational objectives, a third category to be called program objectives is suggested for your use. During the past decade the ability to accurately control costs and report results has become increasingly important to the management of instructional programs. The tools of program budgeting and cost effectiveness analysis rely heavily upon measurable objectives. Program objectives provide this information by integrating learner objectives and organizational objectives in long-term statements about large numbers of learners.

As these objectives are being developed there must be guides to direct their formulation. This is the role of policy in an instructional program, most typically taking the form of directives, by-laws, or rules and regulations. Policies exist to define the broad boundaries and aspirations which are ultimately translated into measurable objectives. Just as there are different types of objectives, there are distinguishable levels of complexity within the learner and organizational categories.

Let's look briefly at the first of these, the levels within the learner objectives category.

TRANSPARENCY #3

LEARNER OBJECTIVES



The broadest, most comprehensive and most slowly achieved objectives are called curricular objectives. These describe abilities, attitudes, and knowledge acquired by the learner as a result of his total experience during an entire program of studies. They are objectives which are contributed to by a variety of instructors over dozens of experiences and may involve knowledge or skill from more than one discipline.

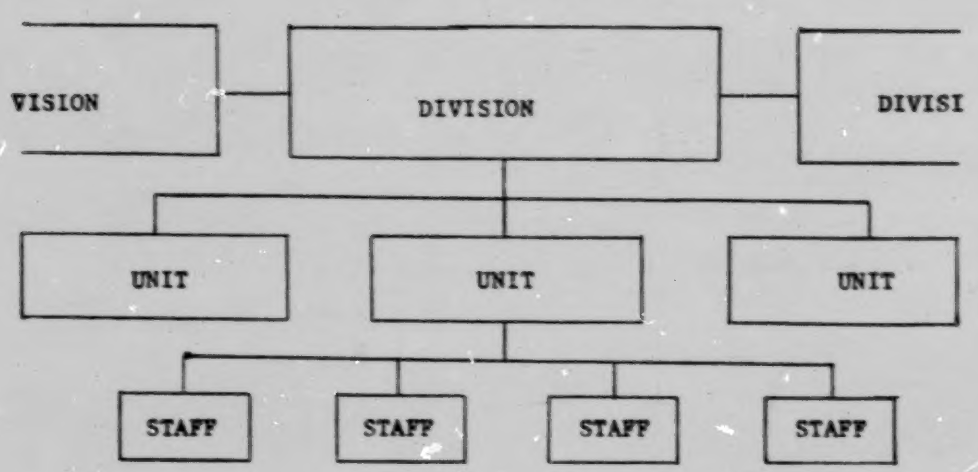
At a lower and less comprehensive level are instructional objectives. These objectives typically are accomplished in a relatively short span of time and include knowledge or skill that is broad enough to be meaningful or useful by itself yet narrow enough to be perceived by the learner as manageable or attainable.

Certain learner objectives call for competencies which by themselves seem relatively unimportant or limited, yet collectively are crucial to the completion of instructional objectives. These small easily accomplished objectives which describe simple tasks most learners have little trouble mastering are called task objectives.

The second type of objectives, which I refer to as organizational objectives, also can be thought of as having different levels.

TRANSPARENCY #4

ORGANIZATIONAL OBJECTIVES



These are defined by the organizational pattern of an agency. The large division or departments within an organization have division objectives which provide subsequent direction to units and individual staff members. Since these are the broadest of the organizational objectives, they facilitate program evaluation and cost effectiveness analysis.

Each division objective is typically achieved through the efforts of several special purpose units which should have their own measurable objectives. These will be called unit objectives.

Objectives for individual personnel are called staff objectives. These provide a basis for the procedure known as management by objectives, which includes such techniques as self-appraisal and performance reviews.

Let me hasten to add the terms learner and organizational are not set in concrete. You may wish to alter terminology to fit your particular need. The key point I wish to make is that there are three levels of objectives which are generalizable to a wide range of instructional programs.

Before we move into the last part of this presentation it's appropriate to look at an example of a hierarchy. The following page depicts such an example and shows the relationship between the definitions we have been using and specific objectives.

DEFINITIONS

(1) LEARNER OBJECTIVES - Measurable predictions of what a learner will be able to do or produce in order to demonstrate his knowledge, skills, preferences or beliefs resulting from an instructional experience. May describe a learner state, action, attitude competency or product. Three levels of learner objectives are:

(a) curricular level - the broadest in scope and most time-consuming of learner objectives. A measurable competency acquired by the learner over a period of months or years as a result of many curricular experiences. Typically involves knowledge, attitude or skills from more than one "discipline,"

(b) instructional level - the learner knowledge, attitude or skill described is broad enough to be meaningful in itself, yet narrow enough to be perceived by instructors and learners as a "manageable unit." Typically not accomplished until after several instructional events or sessions over periods of time ranging from a week to several months,

(c) task level - specifying a very small measurable accomplishment. Limited in scope to that outcome that can be accomplished by a typical learner in a single instructional event or session. Knowledge or skill covered is relatively useless in itself, however, it is regarded as relevant since it clearly contributes to the accomplishment of an instructional objective.

(2) ORGANIZATIONAL OBJECTIVES - Time-constrained statements describing predicted measurable accomplishments of an organization or sub-units of that organization. Cost factors are frequently incorporated to serve as level of achievement indicators. Three levels of organizational objectives are:

(a) division level - the predicted accomplishment of a large operating division (e.g., a school or a discipline area) of an agency or organization. Facilitates division evaluation as well as cost/effectiveness analysis. "Division" is defined by size and functional pattern of the organization,

(b) unit level - the predicted accomplishment of a sub-unit of a division. Accomplishment of the unit objective contributes to the accomplishment of division objectives. Facilitates evaluation of the unit and cost/effectiveness analysis. Typically represents the common efforts of fewer than seven staff members,

(c) staff level - the predicted accomplishment of a single staff member. Contributes to the accomplishment of unit objectives. Facilitates the use of "management by objectives" procedures which include such techniques as self-appraisal, performance reviews and periodic negotiation of staff personal development.

(3) PROGRAM OBJECTIVES - Broad, long-term predicted outcomes determined by those responsible for policy and guidance of instructional programs. Predict a state of measurably improved competency for the constituents of a program. Usually framed in terms of large numbers of learners with time and/or cost indicated. Reflect an integration of both "learner" and "organizational" objectives. Typically require sampled measurement of accomplishment.

EXAMPLES

"...volunteers at least one type of evidence during the year of having had a successful job interview in the occupation specified in his career plan. Evidence will have been verified to be the result of activities which were independent of those devoted to meeting counseling and class assignments."

"...produce a career plan that satisfies his own expectations. The resulting plan will exemplify all of the stated principles of career planning taught in the counseling session(s)."

"...select an instructional program for the coming semester consistent with his interests, abilities, aptitudes, as measured by trained career counselors using reliable measuring devices."

"Each year for the next three years the Counseling and Guidance Division will provide at least two presentations before the Board of Education on the need for and evidences of increasingly more effective vocational counseling and career planning."

"Within two years the school Principal will have on hand sufficient counseling staff and/or support staff to provide counseling services on a counselor-trainee ratio of 550/1."

"By the end of this school year the counselor(s) from each school will submit evidence of having counseled individually at least the 300 students assigned to him/her and verifiable evidence of the noticeable benefits of those sessions presented."

"Within three years, the counselor-trainee ratio will be 300/1, enabling the counseling staff opportunity to individually counsel each student in a career planning session a minimum of once each semester."

RATIO OF OBJECTIVES

You may be wondering how many objectives (both learner and organizational) are typically derived from a policy statement. The ratio of the number of policies to curricular, instructional, and task objectives will vary widely depending on the scope of the program. A rule of thumb, however, is of the order of 1:2:12:50:100. Or simply stated, one policy statement may have two program objectives, which in turn, requires twelve curriculum objectives, fifty instructional objectives, and one hundred task objectives.

Pictorially, this should be remembered as shown on the following page.

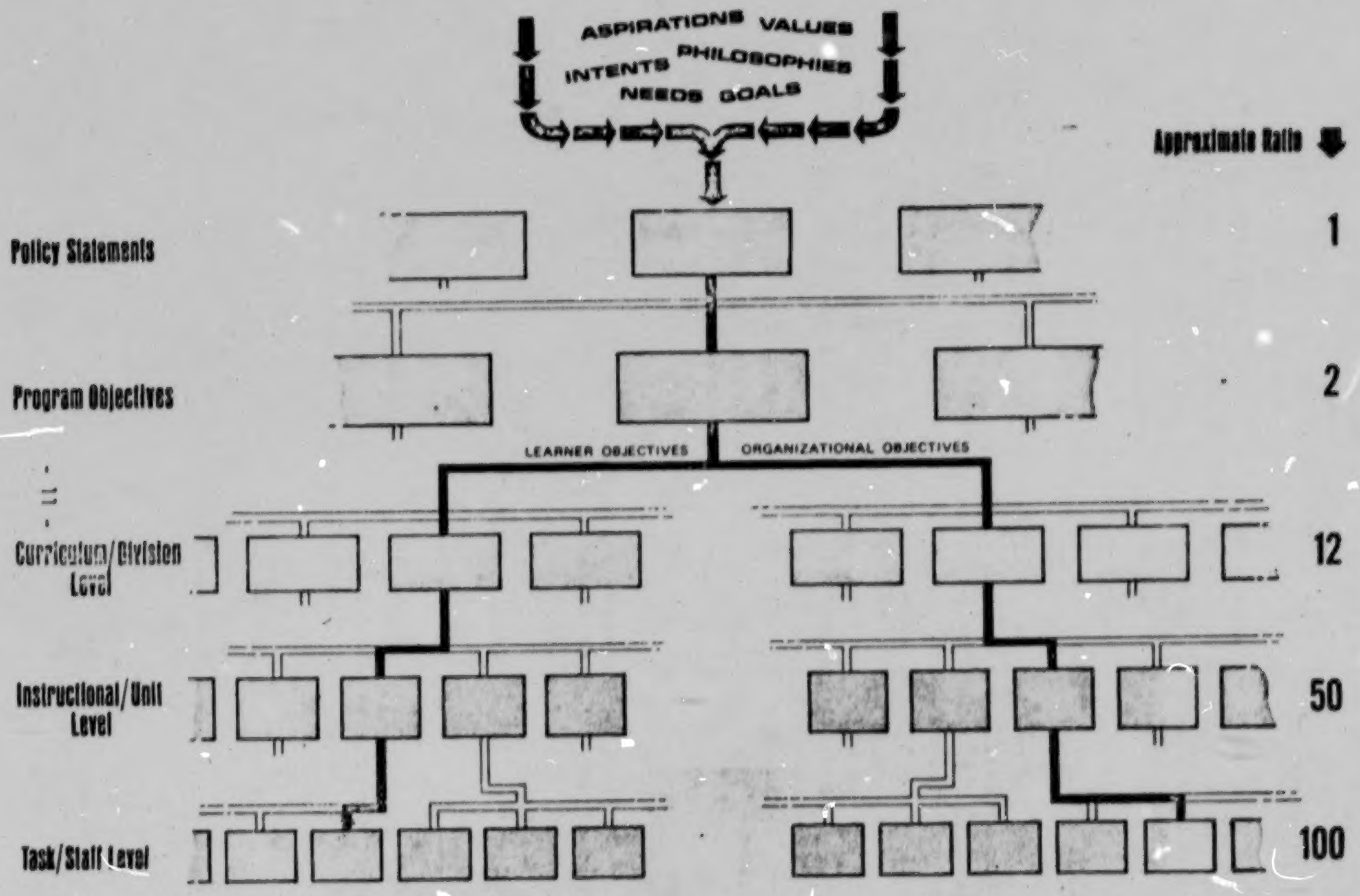
IMPLICATIONS

Finally, it seems appropriate to simply list some of the implications of using hierarchies of objectives. This list is intended to be illustrative of things that do exist in an exemplary way somewhere in the country, but which, in spite of their great need, are still largely missing from our field.

First, any vocational education curriculum guide developed by the U. S. Office of Education, State Department of Education, or other organization should specify the level of objective being used. Curriculum guides should be concerned with the program or curricula level, not the task level. The task level is rightly the responsibility of the teacher.

Second, we should start to evolve measurable objectives from the policy level downward. Too often the objectives we use are at the program level. This results in confusion and frequent change.

Third, we need to exercise better "control" on policy and program level objectives. We must avoid "fads" or popular causes. Educational change must and should occur, but we should have some degree of assurance that the change is for the good of the student.


ASPIRATIONS VALUES
INTENTS PHILOSOPHIES
NEEDS GOALS
Approximate Ratio
Policy Statements
1
Program Objectives
2
LEARNER OBJECTIVES
ORGANIZATIONAL OBJECTIVES
Curriculum/Division Level
12
Instructional/Unit Level
50
Task/Staff Level
100

Fourth, as program monitors, curriculum specialists, or teacher educators, you must start to deal with more than objectives at the task level. In this regard I would also suggest you look closely at the type and level of objectives coming from "instructional objective exchanges."

CONCLUSION

Most instructional specialists agree that the use of goal statements in precise and measurable terms has been a major advance in education. Now that this practice is established to some degree, we need to look beyond a superficial level. As a professional, I am certain you are anxious to accomplish this. You can if you, in cooperation with your colleagues, refine and use hierarchies of objectives.

APPENDIX 1

DEVELOPING AN ORGANIZATIONAL OBJECTIVES HIERARCHY

(QUESTION SET)

GOAL:

The single most important goal (aim, purpose, thrust, aspiration) of the program is to...

PROGRAM OBJECTIVE:

In order to do this, we must see to it that our program produces the following single outcome... (include two or more observable forms of evidence such as time, money, portions of student populations, etc., which can serve as indicators of accomplishment.)

DIVISION OBJECTIVE:

(1) Before the above major accomplishment can occur, some important sub-accomplishments will need to be achieved by various major work divisions. One of these is... (include division's name and its primary outcome.)

(2) The indicators we will use to measure how well the above outcome is accomplished are...

(3) The conditions which will be held constant when we check accomplishment are...

UNIT OBJECTIVES:

(1) Before the above objectives can occur, other, less-comprehensive sub-objectives must be achieved by smaller working units. Two of these are... (include unit's name and its primary outcome.)

(2) The indicators we will use to measure how well the above outcome is accomplished are...

(3) The conditions which will be held constant when we check accomplishment are...

STAFF OBJECTIVES:

(1) The accomplishment of the Unit Objectives above relies upon the effort of individual staff members. Three of these outcomes are... (include person or position name and one of their many objectives.)

(2) The indicators we will use to measure how well the above outcome is accomplished are...

(3) The conditions which will be held constant when we check accomplishment are...

DEVELOPING AN ORGANIZATIONAL OBJECTIVES HIERARCHY

(EXAMPLE RESPONSES: VOCATIONAL EDUCATION)

GOAL: Meet the demand for qualified graduates in the Health Occupations field.

PROGRAM OBJECTIVE: Within five years, reduce by more than one-half, the present discrepancy of 30 to 1 between Allied Health occupation job opportunities in California and the number of trainees currently being certified in California in Health Occupations.

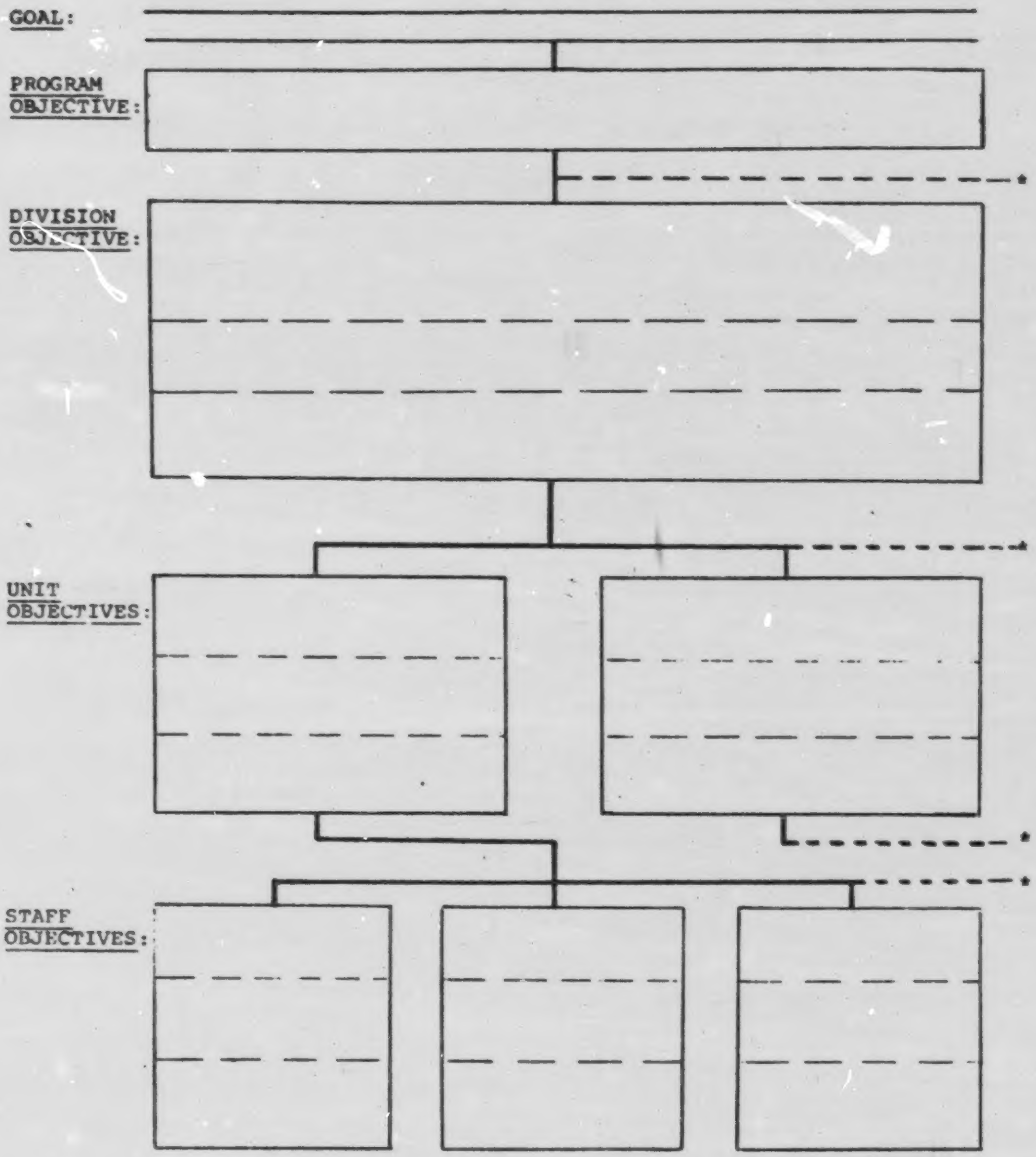
DIVISION OBJECTIVE: By the beginning of the 1974 school year, the Health Occupations Instruction Division will have increased its student enrollment capacity by at least 50% without reducing the number of graduates who are able to pass state certification exams and without increasing the number of staff by more than 10%.

UNIT OBJECTIVE: By June 1972, the Inhalation Therapy unit will submit its detailed plan for incorporating new instructional methods and media which are projected to increase enrollment without degrading learner outcomes. The plan should include all sections defined in the *District Guidelines for Plans*.

STAFF OBJECTIVE: Mr. Thompson, Inhalation Therapy Instructor, has agreed to complete at least 6 units of instruction in Educational Technology being offered at the University Extension, by the end of this semester, provided he is given no additional work assignments.

DEVELOPING AN ORGANIZATIONAL OBJECTIVES HIERARCHY

(RESPONSE FORM)


GOAL:
PROGRAM OBJECTIVE:
DIVISION OBJECTIVE:
UNIT OBJECTIVES:
STAFF OBJECTIVES:
*
*
*
*

*NOTE: Don't let the spaces provided limit your thinking. Use additional sheets or cards as needed to expand the hierarchy.

PROGRAMS FOR DISADVANTAGED

PROBLEMS AND ISSUES IDENTIFIED WITH DEVELOPING CURRICULUM FOR INNER-CITY YOUTH AND ADULTS

by
Harry Huffman*

In this presentation, I will base my remarks on experiences in curriculum and other projects conducted while at The Center for Vocational and Technical Education and here at Colorado State University; also in cooperation with Hunter College of New York City, Temple University and some Philadelphia teachers, Southern Illinois University and East St. Louis, Detroit, Laredo, and Denver. These projects concerned curriculum building and modification for students who are uncommitted, drop out, suffer from deprivations and prejudice, and are "put down" — in short, inner-city youth; also related in-service and pre-service teacher education projects.

Several publications resulting from this work are published by the U. S. Government Printing Office. One is MODIFYING DISADVANTAGED STUDENTS' PERCEPTIONS OF OFFICE WORK and another is still in process entitled DESIGNS FOR VOCATIONAL TEACHER EDUCATION OF TEACHERS OF THE DISADVANTAGED, about which a great deal is proposed for teachers of inner-city youth. A third published by McGraw-Hill is WRITING PERFORMANCE GOALS: STRATEGY AND PROTOTYPES.

In my presentation I would like to talk about four things: (1) the curriculum designer's syndrome with seven symptoms, (2) seven evidences of "mouth over muscle," the usual problem of failing to put the action where the talking is, (3) the resulting curriculum, and (4) seven issues.

So first, let's look at the seven symptoms that lead to the curriculum designer's syndrome. The first two will need little discussion since I think that they are obvious, but they are symptoms perpetually with us whatever we do, whether it is curriculum development or project development. These two are limited financing and the numbers game. Limited financing, the scarcity of financial resources to carry out the mission, is a constant problem and thus allows us much less time than we would desire for problem definition, needs identification, and curriculum design. The numbers game is one of producing so many curriculum guides with so many pages, the key idea being production.

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The third problem is equal priorities. In curriculum development, hasty planning on account of limited financing and the numbers game often results in a laundry list of needs of equal value. A laundry list can be likened to the problem where loads of laundry are brought in to be ironed. If endless loads are brought in, the manager can see no end to her work and thus loses drive and motivation. The curriculum maker's laundry list of needs should be studied for priorities and for organization. Unless priorities are established you have a kind of "hip pocket" operation where each item is handled with equal attention and with little sense of urgency.

The fourth problem I call ambiguous ambiguity. I can illustrate it by curriculum planning meetings we have had with inner city schools in which a number of school personnel were taking part, such as the assistant superintendent, the senior high principal, the middle grades/junior high principal, the vocational director, and some vocational teachers. Even after several meetings we often obtained general descriptions of problems, but few specifics. Feelings were expressed about needs which often remained undefined and undescribed; and again no priorities were established. In one particular project, we went around and around on attempting to help an inner-city school develop a project which could be funded. The results of the meetings can be characterized by the comments of one or two of the harassed participants who said, "Who's going to do all this?". These meetings ended with ambiguous ambiguities which gave us no specific mission and hence no funding.

The fifth item is the early occupational choice symptom. Examples can be given of state board-sponsored films in various states that attempt to portray the need for good vocational programs. One of these films was reviewed while I was at The Center by a number of vocational and practical arts educators whose criticism of this film was that it appeared to require junior high students to make early occupational choices. The problem constantly arises, "Are we forcing our students to make early occupational choices?". Do students have too little information about too few occupations or occupational clusters to make decisions? Perhaps too much film production is turned over to media specialists who do not have a clear conception of vocational program development. Perhaps also we are unable to convey our beliefs to media specialists (1) that students need to study their interests, feelings, and aptitudes constantly in relation to job requirements, life patterns, and opportunities in many occupational clusters, (2) that students need the early valuable experience of finding out that you don't like something, life would be miserable if you had to stay with it, and school is a place in which you improve your choice and committment. Inner-city youth need many of these experiences.

Curriculum development should provide for a good student data system to record individual students' interests, aptitudes, capabilities, occupational cluster explorations, occupational choices, and training experiences. As students review their records against job requirements, they can make tentative decisions. This learning and tryout period may run for a much longer time for some than others. Even those who leave schools to take jobs may need a great deal of assistance in examining their experiences so that they have a basis for better choice in subsequent educational programs. A curriculum developer is frequently forced to operate as if the student had made his final choice and could never change, which is obviously unrealistic. Rather, I think the emphasis should be on constantly studying interests, aptitudes, and capabilities against requirements in various clusters of occupations, and then making tentative decisions to try them out. Perhaps this is a never-ending process, as it has been for many of us.

The sixth symptom that I have experienced several times is the can of worms. In working on the extensive project of modifying the perceptions of inner-city youth, particularly girls, toward office work and comparing those perceptions with perceptions of employed office workers in some of our larger cities, we set up a workshop at Hunter College of New York City and developed units which we thought had potential for helping change the feelings and perceptions of young people about office work so that those who chose to go into the business education curriculum did so with their eyes wider open than they would have otherwise. When these units were tried out in intensive experimentation in Philadelphia, Detroit, and Laredo, one of the difficulties became immediately apparent--school regulations or administrative regulations. Another problem was the support of the community in using community and employer resources as extensively as we had developed in our units. Unfortunately, employers also do more mouthing than acting. When we reanalyzed our effort, we found that we had not taken into consideration serious planning about how to obtain administrative cooperation, community and employer cooperation, parent cooperation, and so on. Hence, systems development for curriculum building opens a big can of worms. With limited resources, you need to develop the whole system, but then delimit your effort to something manageable.

The last problem is program standards. In classes that I teach in the summer I frequently hear vocational teachers say, "I have my standards in my class and I cannot lower my standards." Even teachers who have been involved with performance objective development and the accountability laws say, "Seventy-five percent of my students will get 75% or more on my exams," and they call that their accountability. To me this is opposed to the concept of performance objectives development and prescriptive treatment where you do diagnose students' needs, you do propose in some established order a series of performance objectives, and you do permit students to work at these at their own rate and to perfect each one.

Rather than program standards as a measure of accountability, how much better it would be to play the numbers game by tabulating how many students perfected performance objectives which enabled them to find jobs, whatever jobs at whatever level.

These seven symptoms lead to the curriculum designer's syndrome. They confront you constantly.

The second group of these problems, let's call "mouth over muscle", the failure to put the action where the talking is. Again, there are seven different kinds of situations.

The first is limited staff to work on curriculum, which goes right along with limited financing.

The second one is teacher's innovation. Everyone agrees we should have it, but the action is missing. For example, the units developed at Hunter College were taken back by a teacher to one of our large cities who finally wrote me that they had all been layed aside. The teacher was not going to be allowed to attempt to implement any of them. In fact, she was discouraged. This is not as bad as a school system in which career education curriculum materials were to be introduced in September and the teachers were given a training program on how to use them without even having any of the materials to examine. This procedure positively stifles teacher innovation. In Project Tomorrow during the school year 1970-71, thirty vocational teachers, many of whom came from the Metropolitan area of Denver, individually developed projects to meet the needs of potential dropouts and other typical problems of inner-city youth. In some cases the teachers were unable to implement their projects or dropped them as soon as the parent project was dropped because they had difficulty getting permission to carry out their projects or their efforts were not reinforced by supervisors and administrators.

A third "mouth over muscle" problem is failure to use student input. It seems to me from way back we constantly said, "Take into account student needs, aptitudes, and interests." Since aptitude and other tests often fail to give accurate information about inner-city student's interests, aptitudes, and feelings, it seems likely that formal or informal student advisory committees should be used in curriculum development. About a year ago, I approached a vocational director in one of our large cities about preparing an article concerning student input for the AV JOURNAL and was about laughed off the telephone. He told me in no uncertain terms that students had very little to contribute to curriculum development. Even so, in Project Tomorrow we have three demonstration exemplary programs, one of which is in Fort Collins, which of course does not represent an inner city but could possibly become one in a few years. Another is in one of the systems near Denver. Our objective is to make certain that student input contributes to total program and curriculum development. The person employed in each school is vocationally credentialed. His purpose is to act as an advocate or an ombudsman for the students, largely in program and curriculum modification. One ombudsman tells me that many students have a severe dislike for the school and see the school as "putting them down" every day. They see students in classes who, because they are cheerleaders, athletes, or members of the student council, get away with insubordination, mischief, and other things that they themselves are "put down about" every week. The ombudsman tells me that these students recognize that they need an education but they are against the school and they are against the teachers. They find teachers imposing things on them and imposing the teacher's way of doing these things without students' feelings being considered. Thus, these teachers are in the process of building a value system on the part of students against schools, authority, teachers, and the system. The resulting value system built upon the feelings of the students may be part of our most severe problems in the public schools. In B. F. Skinner's book, BEYOND FREEDOM AND DIGNITY, the chapter on values, whatever you think of the entire book, seems to have a great deal to offer us here. The feelings of the students about what they are taught is equally important to the things they are taught. More about this later.

The fourth problem in "mouth over muscle" involves ineffective use of advisory committees. I could cover a great deal on this because I have a doctoral student who made a careful and detailed study of the effectiveness of advisory committees in Colorado. I have a feeling that if the study were replicated in other states, you would get much the same results. This student conducted with trained interviewers interviews with advisory committee members on their home bases. It was astounding how little they knew their role on the advisory committee and how little they felt they were of assistance to the schools. In my work with advisory committees, I found that we frequently missed and failed to properly interpret what was being said.

In many cases the members were telling us in general terms some of their problems, but we often failed to pursue the problems far enough to get the details. As you well recognize, advisory committee members are often untrained in establishing educational objectives and they find difficulty in describing their needs. I remember in one city an advisory committee member was constantly saying that personality and character traits were very important and, when questioned, he mentioned initiative, responsibility, and the usual words. Only a couple of weeks ago, a speaker representing Martin-Marietta told us to send him employees who had a mission, who know where they wanted to go. Unfortunately, these words are difficult to convert into reasonably precise performance objectives. When I was in Los Angeles a couple of years ago, I talked with an advisory committee and visited one member at Mattel, the toy manufacturer, who finally pursued one of his problems in sufficient detail for me to see it somewhat as a performance statement. Actually, a similar statement appeared in the recent issue of EDUCATION U.S.A. This advisory committee member talked about the fact, and not in connection with labor or unions, that the employee with discretionary functions, that is no regular task cycle, should be able to "negotiate" with the boss. Since then, I have found a similar statement in EDUCATION U.S.A. saying that some employees should be able to "psych out" what the boss wants and have enough control over his personality to provide the boss what he wants. I have been writing some performance objectives along this line. For example, objectives dealing with the problem of eliciting sufficient information to carry out a job and recording or remembering enough of the details to carry it out, also one on negotiating or "psyching out" what the employer needs. In connection with office work, one employer in a large publishing house was greatly upset, as many of us are, because he was going to lose his administrative assistant--secretary. He was very much disturbed that it might take a whole year before his new secretary could fill her shoes. My analysis is that he needed someone who could aggressively "psych out" enough about his work and responsibilities so that she could answer questions, anticipate job needs, and master a new vocabulary. In the manual WRITING PERFORMANCE GOALS: STRATEGY AND PROTOTYPES, we build a model, an elaborate one, for writing performance objectives. In this model there are some 12-15 conditions that ought to be considered in every performance goal. My belief is that when the student becomes aware of some of these conditions, then he has the background to ask sufficient questions of the job supervisor or manager to whom he reports, to obtain a clear picture, or psych out what the boss wants. Such questions might include: "What is given? How do I recognize it? Is it a physical object? Is it recorded information? Is it people? Is it intangibles? Where is the thing or things that are going to be dealt with? Is there somebody waiting for this to be completed? How fast should it be done? How should it be done? Of possible alternative procedures, which is the best? Do I need assistance? Do safety measures need to be taken? Will I have supervision? What will the outputs be like? How will I know whether the output meets the quality standard? Is there a time limit or priority rating? and so on."

Presumably, a person who can "psych out" can mentally run down such a list, select, and ask significant questions that help him find out what needs to be done and then is able to work effectively and efficiently, particularly in discretionary operations. I carried this procedure through with an accounting teacher, who promptly altered his instruction so that all student actions are initiated by business papers and forms from the first day of instruction rather than from abstract narratives as found in a typical textbook.

Finally, advisory committees, if we listen, will tell us they need employees who have ability to persuade a customer and to look a person in the eye without seeming to stare.

The next problem is "blue sky," but the problem is actually a blotted out blue sky. Another term is the overly-cautious curriculum director. As opposed to caution, one vocational director in a Ohio city said that his major job was to blue sky and be thinking about what ought to be done in the total vocational system by 1980. A good example is one that occurred last year in Project Tomorrow where my research associate established a team in a school with a large number of Spanish-surnamed students. The team developed a project in which they were going to obtain student input in modifying the curriculum. On the team were some administrators, a vocational director, a Spanish teacher, and some vocational educators. After they finally defined the problem, they needed input from the students about what they felt about the school. Thus, the committee began developing a questionnaire and preparing to distribute it among the students. At one stage this plan got to the attention of the superintendents. My research associate had thought the superintendent was fully aware of all that was being done since we were invited in to develop a project. The superintendent became very frightened about the project and thought it might lead to student rebellion and unrest. It was, however, the opinion of the Spanish teacher, who was also Spanish-surnamed and was well identified with the students, that there was no such possibility. It was a sincere desire on her part and the students with whom she was relating to have some input into the program and secure a change of attitude on the part of some of the teachers. Unfortunately, there are numerous instances of insecure and overly-cautious curriculum makers who fail to "blue sky."

The sixth problem results from overuse of the Peter principle, when writing performance objectives, in particular. In writing performance objectives, it is very easy to write the traditional ones--the ones that Mager illustrated and to write psychomotor ones, particularly with reference to skills such as typewriting, welding, quantity cooking, where some measure of skill is involved. The Peter principle states that you busy yourself with these at the expense of trying to write the ones that involve the feelings and the affective goals related to these skills. One of the things that Skinner made clear to me was that the feelings of students about what they were learning eventually developed a value system that they operated by. Unless we are concerned with seeing that good feelings emerge and reinforcing them, we are tearing down the very knowledges and skills that we are developing. I would like to recommend a moratorium on the knowledge and psychomotor business of writing performance objectives and write the "feeling" ones. Perhaps we have for the moment written enough of the knowledge ones and should now be concerned with the feelings about what students are learning and how these will affect their lives by relating them to the feelings of successful people on the job. The University of Minnesota has spent a great deal of time on matching job satisfactions with job satisfactoriness.

"Too many shortcuts," the seventh problem, results from "mouth over muscle." An easy way out is to take a shortcut. There is no real shortcut to writing performance objectives, particularly if you take into account the affective domain and the detailed procedure described in the publication--WRITING PERFORMANCE GOALS: STRATEGY AND PROTOTYPES.

As the result of the syndrome and mouth over muscle, I would like to describe the curriculum designer's output. As a result, we have a "traditional instead of an innovative curriculum." We find, as one teacher told me in Denver, that students hide in the inner city to seek a more interesting environment. He thinks that the curriculum is punishing the students, for example, putting students in a basic education program that attempts to teach 15- or 16-year olds of third- and fifth-grade reading levels how to read is a punishing curriculum however much they need it. A second result is an "all things to all people" rather than a "one-to-one" curriculum. Probably the factor leading most precisely to the "all things to all people" curriculum is the lack of student input.

A third result is a "throw-away instead of a trailblazer" curriculum. A curriculum built with a limited financial resource results quite often in a curriculum guide that is ignored or thrown away. An example of the cost of curriculum building according to some authorities is a minimum of $3,000,000 per occupational cluster. Twenty clusters would cost $60 million. Furthermore, each locality needs to adapt it to their style of teaching which means an additional expenditure of money.

A final result is an "ivory tower" curriculum rather than a "workroom" curriculum. A curriculum built without adequate input from advisory committees, teachers, and students results in an "ivory tower" curriculum. A curriculum developed by teachers with expert advice, student input, and advisory committee input results in the "workroom" curriculum.

Finally, I want to mention seven high priority issues:

(1) Whether or not we can be provided adequate staffing and resources for curriculum development.

(2) Whether or not we can accept a major mission of vocational education to build materials for what the National Advisory Council to the President calls the student most difficult to teach, the one that least desires education, and the one for whom education can do the most.

(3) Whether or not we will implement a prescriptive education program where diagnostic efforts are made to find the needs of students, where individual performance curriculums are written and where students progress on an individual basis.

(4) Another recommendation of the President's National Advisory Council on Vocational Education leads to whether or not vocational educators can and will take leadership with business and industry in reorganizing jobs to fit people. We have long subscribed to the idea that people should be molded to jobs. Today we know that such a procedure results in large numbers of unhappy, disenchanted, resentful people in the United States. We have been challenged to help business and industry begin reorganizing jobs to fit people's needs and provide a satisfactory work life for them.

(5) Whether or not we will try the concept of positive reinforcement, which is probably most effective with the attitudes, personality traits, and feelings of people about themselves and their work. Ultimately, it involves a "work ethic" value system. The challenge is whether or not we will use a system of positive reinforcement about work life rather than imposing our own work ethics which may be in many cases out of date.

(6) Whether or not we will provide for achievement motivation by writing performance objectives and using the positive reinforcement system to get people to want to achieve something satisfactory in their lives.

(7) I will mention only briefly this item and that is whether or not vocational education is a "real tool for equal opportunity."

CURRICULUM PROBLEMS - INNER CITY YOUTH AND ADULTS

by
Cleveland Dennard*

Good afternoon fellow students. I say fellow students because we are constantly in a process of learning. In our environment we are alleged to make substantive decisions and implement programs as a result of those decisions. Because of the nature of change, and the necessity of staying aware of what is going on, we are in an eternal state of learning.

I would like to share with you today some of the ways in which I view curriculum development for inner city youth. First of all, I find it essential to give some definition to what we refer to as the "Inner City - 1970's." After looking at data from the 1970 census, we find that the population migration that started in 1947 with those of us with the GI Bill heading to the cities to buy houses as veterans, or attend colleges and universities, also brought families to the cities. The migration that took us from the rural areas into the urban areas in the late 1940's, the 1950's, and the early 1960's later reversed itself. Those persons with sufficient means moved from the rural farm to the urban areas during this period, but are now moving back to the rural non-farm areas, or we refer to it as the sub-urban areas. The residue left in the cities are what we refer to as the inner city.

Invariably, if you have followed some of the research or news releases on the changes of fertility rates and the "baby bust", which started out as the "baby boom" during World War II, you will find that instead of producing an average of four children per family the average is now considerably less. There are all kinds of reasons why people are not having as many children as before. The group which moved from the central city back to the suburbs now also follows the current national trend in this way also. Those people who remained behind in the inner cities tend to have more children than those who have gone to the sub-urban areas.

When we examine the age structures of those over 65, we find more of the population living in the cities. Put another way, you will find a much higher proportion of people that are retired living in what we call the inner city or central city. You'll find a higher percentage of persons of school age, also in the central city. A higher percentage of the population, 19-44 is living in the suburbs. This represents a larger part of the work force. When we try to place this in perspective relative to curriculum development and to assure the educational experiences that prepare individuals for jobs, or to upgrade individuals on jobs, with this distorted distribution of the population within the inner city, it requires a much more substantive examination than purely the rhetoric of providing education that fits individuals for gainful employment. Somewhere we have to identify the employment.

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A further examination of the standard industrial classifications for any inner city will show in the decade of the sixties that the percent of out-migration of businesses from the city to the suburbs was phenomenal. This was not peculiar to any region of the nation. Eastern Airlines headquarters office decided they needed to move out of Manhattan. In the District of Columbia, we have had company after company move to the suburbs. We have had community confrontation over whether-or-not governmental facilities could relocate in the suburbs, so that there would be better arterial flow by traffic routes. When we examine this kind of information we will find that the characteristics of the city and its population is quite different in the United States in 1972 than it was in 1942, 1952, or 1962.

What this suggests then is a careful examination of the employment characteristics of the city itself and the region that it serves. If curriculum development for the residents of a city is to have validity, it must be based upon the kinds of jobs that are growing as fast as the population is growing, or the kinds of jobs that are growing faster than the population is growing. We must determine cooperatively opportunities to maintain educational experiences for students in those occupations that are growing slower than the population rate of growth. So, when you look at your standard industrial classifications and the kinds of businesses, it is important, in my judgment, to know, whether in the District of Columbia, or in any one of the 100 major metropolitan areas, or any of the fifty standard largest statistical areas, what are those jobs that are growing faster than the population growth in those communities? This suggests that there will be a demand for the products of the vocational-technical and adult education school. If job growth is not known, it appears to me, that all of the planning and executing is for naught, and it is unrealistic.

It is important, therefore, in thinking through the rationale of curriculum development it ought to be predicated first upon what do people do for a living, and what is the probability that this need will exist one or two decades hence. Out of this kind of decision-making must come the needs for an educational environment for which the curriculum is designed. The investment in equipment and brick and mortar to assure that the experience is valid ought to be based on the fact that, at some point in time, the output of students will have been justified, based upon what was required to create the environment in which they were going to be trained. This to me makes a lot of sense when spending public funds.

The second consideration, essential for curriculum development, is an examination of the magnitude of demand. In the District of Columbia, for example, our manpower projection through 1980 shows that 3% of the district's population will work in aviation. In the five county metropolitan area 3% of all the jobs are in aviation. This includes Washington National Airport, Andrews Air Force Base, Friendship Airport near Baltimore and Dulles Airport. Every airplane has to be monitored by traffic controllers to get them on the ground. Every airplane must be validated as airworthy by aviation maintenance men in order to get it off of the ground. There must be people on the ground directing it to an appropriate gate. Once you get off of the plane and into the terminal someone has to be there with the food, magazines, daily newspapers, etc. Whether the person is in aviation as a mechanic or whether he is in aviation deliverying services that the citizens require, 3% of all jobs are in the metropolitan area are concerned with aviation.

From the validity standpoint, it is logical that you should design the curriculum to match this need, not only what is going on now, but what will be occuring in the future. In examining this further, the necessity of knowing the processes that are carried on in a specific environment, aviation for example, we tend to go to the desk counter and tell the person that we have reservations, and rather than someone taking our word for it, they turn to a terminal typewriter, type your name and flight number and receive an answer which verifies that you do, in fact, have a flight assignment. That one phenomena is an example of on-line data processing in the aviation environment. This has direct curricular implications as to what goes on back in the inner city. If we don't see that as a part of validating what should be included in the curriculum in the inner city, then we are missing something very basic and very fundamental.

We are not now discussing all of the sophisticated techniques of program planning, nor all of the things which happen in a city. But, rather, what are the implications that we can validate that relate to design of the curriculum to serve students. I think we now know how to do this, and do it well. I think we need a different kind of orientation sensitivity.as to "how do we deal with the intangibles and imponderables as they relate to the residents of the central city itself?"

First, let us verify a technique to reinforce ourselves. Learning, we say, is the modification of behavior as a result of one having gone through an experience. Curricula, then, is the aggregating of the learning experience through which one must go in order to exhibit the behaviors that the curriculum inculcates. If that is true, it really should not make any difference as to whether or not we prepare curricula for students enrolled in the inner city or the outer city, if we say that we are preparing individuals pursuant to the provisions of the various legislative acts related to vocational education. It really should not make any difference if we are designing curricula experiences through which individuals may go in order to fill jobs that are gainful in their perspective.

There should be no problem in this design, until we come to another set of realities. In 1946 Congress passed the Davis-Bacon Act, known as the full employment act. The purpose of that act was to structure some kind of framework for viewing what we mean by full employment opportunities in the United States. That act has always been viewed by the Council of Economic Advisors to mean that if 96% of the employment age group (14-64 years of age) were provided employment opportunities, we would have a full employment economy. The four percent of that age group left over could appropriately be accommodated through various types of social legislation, including education. In 1946 it probably was a valid assumption because my family, and others, had not moved from Florida to Baltimore, Detroit, Chicago, New York and other places, Some of your families, also, had not moved from rural areas into the cities. Once you begin to concentrate the population into the fifty large metropolitan areas, what would look like a four percent unemployment rate on a national basis might escalate to a 31% unemployment rate in a given community. To ask the school system, then, to come up with a curriculum that is going to prepare a student for gainful employment in an environment where there are no jobs is a cruel hoax to play on the aspirations of both the professionals as well as the citizenry itself.

What we have failed to do as an educational group is to address the social restrictions and inhibitions that exist in the larger society as they relate to the placement of our graduates. That is a different problem altogether with what we must deal in the process of curriculum development. It also has greater implications in the inner city than anywhere else, because, in the absence of dealing with that kind of reality, we tend to identify for ourselves all of the sociological impediments of a group, or group of groups, who happen to reside in a city at a point of time. I don't think these are valid assumptions.

In New York city you have Puerto Ricans, and in Washington, D.C. we have everybody. You name it! And in the Southwest you have one group and in the far Northwest you have another group. In the Southeast you have another kind of group and in the north Atlantic states you have another. As we look at the cities who get the jobs versus who goes through the vocational curriculum and does not get the job it imposes on us a different kind of analysis. You might ask, is the problem one of curriculum development, is the problem one of cooperative relationships between business and industry and the school, or is the problem one of rethinking what we actually mean by an occupational attitude?

I think we have come to the point where we must recognize the short term brushfire behavior of Congress that has existed since 1958. This began when the rural population moved to the city and we started with the area redevelopment act to develop the rural areas. Then we suddenly realized the people were in the cities, so we needed a manpower act in 1962 to transform people with rural skills to compete in urban activities. Then when the Civil Rights Act was passed we had to do it a different way; and then the OEO Act was passed we embarked on a different course. Now, whenever Congress meets it tries to deal with what was allegedly that four percent unemployment rate with six percent unemployment statistics staring it in the face at a time when we are still trying to carry on the vocational education program which some say prepares students for jobs that do not exist.

If we had solutions to this problem, we wouldn't need NASA, DOD, and any of the other kinds of agencies. It is important in the solution, therefore, to identify the problem and apply our energies in finding solutions which in our judgment makes sense toward improving the quality of life for the students who go through our curricular areas, and who go through with an awareness that leads to some productive employment for them. I think this is important for the persons engaged in manpower experiences, whether these are academic or in a vocational education program in the high schools, an adult school, or a manpower program operated ancillary to the regular curriculum. We have a responsibility to know what is the behavior of an employment market as an input to what should be included in that curriculum that prepares a student to go out and cope with the problems of employment.

Now, how do you do this? How do you find out whether or not a company will hire an individual who is not a member of the ethnic group that the company hires in general? Is that a valid question? How do you find that out? Try a test case. Send a fellow down to the personnel office, tell him to put on a pair of shamrock green pants, alligator shoes and chartruse shirt. Send him down to see if he will be interviewed. If they won't interview him you can say they are discriminating because of his appearance, or because of the way his clothing looks, or something else. Does the school have a working relationship adequate to say, "Here are the characteristics of our community; these are the people to be educated; how many people do you need in this curricular area this year; and how many the following year?" There are industries that make projections, but, do we include in our planning mechanism what is going to be the growth relationships in our community? If we don't, then we are deficient in a basic ingredient that goes into curriculum planning.

Second, where we use advisory committees, do we talk to our advisors about these kinds of things? Is this the kind of advise we get? Or do we really hope that by the time the class graduates all of the problems will be solved? How do we do this? If we are not using these levels of basic honesty in analysis, then what we sift through does not provide us with the rational basis from which to plan a curriculum. It seems to me we must take the analysis type of approach, or some facet of this type of approach, in designing the experiences. Are we in a reasonable position to improve the quality of the type of experience on the one hand and the opportunity of placement on the other?

Also, what kind of feedback do we get on how well the students who come through the system perform once they are on the job? Are there any critical incidence analyses that permits us to know what a student should have known at the time there was a breakdown, either in manipulative skills or in an emotional relationship? Has a critical incident analysis been made? In a job situation, between employees or between an employee and an employer, someone has to have a de-methodologizing capability. The student has to be sensitized, while a student, to anticipate the situation. There is a point in time where certain intellectual skills have to be brought to bear on how to analyze a problem and how to act on it to assure that you remain in that employment situation. Most of the studies show that most people lose their job, not because of inadequate capabilities, but because of attitudes. How you perceive it and how you behave in terms of that perception! It seems to me these are areas of concern which form the basis for starting with a content analysis or a job analysis. What are the aggregates of activity carried on on-the-job for which a content analysis can be done and from which that analysis can be converted into narrative experiences through which that student must go to assure that he or she has the performance capability to discharge the work of that job? It seems that this is the area of concern that is particularly applicable to the inner city.

There are a lot of people in the inner city who are angry. They perceive educators as perfectionists, who assume that they will not be misled. They believe everything they hear from a professional educator is true. When it is determined that is not the case, the behavior exhibited by the student is invariably deviant. During the past five years you have seen a great deal of this on college campuses. Our neighboring institution just locked the door and called the National Guard. They don't even discuss it.

That is not the way to synthesize information as it relates to the realities of the environment in the city. We must try to understand what are the precipitating factors that produces this level of behavior on the part of students. I think we are now at a point when, in order to make vocational education vibrant, meaningful and responsive it has to have its sociological base as a curriculum in the sense that Charles Prosser described it. I think it is more meaningful as we develop vocational courses for use in high schools and adult programs and elementary schools in our society today than it has ever been. I would hope that after advancing these notions we can get into some kind of dialog that will have more meaning to you and prove more valuable for the time you are spending at this institute.

PROBLEMS AND ISSUES IDENTIFIED WITH DEVELOPMENT OF CURRICULUM FOR INNER CITY YOUTHS AND ADULTS

by
Lawrence Davenport*

> "I do wish that all of us had learned one manual skill. We live in rooms using lamps that we cannot repair, telephones and television sets that we cannot explain. This alienation between the hand and the objects that serve it is a serious handicap."
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> --"A Conversation with George Steiner," by Elizabeth Hall, Psychology Today, February, 1973.

The subject I want to discuss with you is curriculum, its problems and issues that are identified with the development of curriculum for inner-city youths and adults. Curriculum reform is necessary in order to achieve the needed changes in our schools. What is needed is a total restructuring of the American educational system around the concept of career education. This restructuring would call for change in curriculum, teacher training, re-education of administrators, improved support services, especially vocational guidance and counseling, and even getting students out of the four walls of the school itself to explore the world of work.

PUBLIC SCHOOL EDUCATION

Public schools have failed to be relevant to the needs of students, the community, and the society. The school system saw as its main job the preparation of students for college, rejecting from its curriculum planning the fact that less than 20 percent of our students ever attained a baccalaureate degree. The others wake up the day after graduation to find they have little preparation for the world of work.

It's estimated that 50 percent of job openings in the 1970's will require training beyond high school, but less than four years of college. An additional 30 percent of job openings will require

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only occupational training at the high school level. However, our schools with their 19th Century concepts and values continue to plan their curriculum for the small percentage who will go to college, even though college serves only a small percentage of the population and carries an exaggerated aura of prestige and social status, making other types of education other than college seem undesirable.

Today more and more black students are entering colleges and universities. But the percentage is still small. According to the 1970 census figures on the educational attainment of employed males between 25 and 64, only 5.7 percent of blacks (compared with 17.7 percent of whites) had 4 years or more of college preparation. Blacks having 1 year of college education constituted 12.6 percent of the employed group, compared with 30.9 percent for whites.

In this age group, 39.6 percent of blacks had high school diplomas, compared with 67 percent for whites. Add to this the younger generation, and the figures for high school diplomas are somewhat better, but still far from acceptable.

The proportion of blacks 20 years of age and older who have high school diplomas rose from 24 percent to 39.7 percent between 1960 and 1970, an increase of two-thirds. For the same period, the percentage of whites with secondary diplomas rose by one-third from 45.4 percent to 61.8 percent. In the age group 20 to 29, the percentage for blacks rose from 40 to 62, and for whites from 65 to 85! The number of black students graduating from high school is continually increasing, yet only a very small percentage are going on to college.

While our high schools continue to ignore the needs of the majority of students, our colleges and universities' "cups runneth over" with a surplus of degree-holders in many fields.

The American people have kept the faith in the value of education. They bought the idea fostered by most in the educational community that the only good education was education which climaxed with the baccalaureate degree. They accepted this idea as a fact as though it were the eleventh commandment. Now they are having second thoughts and are beginning to realize that this goal is neither a practical one with respect to the needs of our society, nor desirable for a great number of students. A false sense of prestige and value has sent many students down the academic path who would be happier and more productive in other fields. This has been true for students regardless of their social or economic condition. Unfortunately, society has succeeded in implanting the idea that any choice other than college is a lesser one, and less worthy of attention.

Inner-city residents have too often shunned vocational and technical education as being "second-class" education. This is unfortunate, for in so doing, they have restricted the opportunities available to themselves and their children.

Education must be challenging, relevant, and offer students a variety of choices. The career education concept, if properly formulated and implemented can meet that criteria. The need is desperate. Of 3.7 million youngsters leaving formal education in 1970-71, nearly 2.5 million lacked skills adequate to enter the labor force at a level commensurate with their academic and intellectual promise. Many left with no marketable skill whatever.

If properly implemented career education can greatly increase the opportunities available to all students. It should provide an awareness of the full range of career options. Career education by no means will downgrade academic achievement, but rather will sharpen the basic intellectual disciplines and make them more relevant to the students' interests and experiences. Therefore, students can see the practical application of algebra, spelling or geography, as they relate to the world outside the classroom.

There is really nothing new in career education. All the elements exist in our present system. Simply stated, career education is a modernization of our curricula, making the best use of what is there, putting emphasis where it is needed most, and seeing that the greatest number of students possible reap the benefits.

Career education is not a tracking system. It increases the avenues available to the students and allows them to make a rational and educated choice. All students would take both academic and occupational courses, and their interests in one area would not preclude them from switching to another.

Career education will set the tone and create the awareness of the variety of opportunities. It can lead to technical training, scholarly studies, modern service-oriented jobs, professional degrees, industrial crafts, or any of the other careers which are part of our complex society. Vocational education is one facet of career education which has to do with the skill development necessary to qualify for the career opportunities available.

Teachers would revise their course guides to include the work career concepts. The teaching of basic academic subjects will be more interesting and relevant. The academic achievements of the mass of students will be increased.

This aspect of career education is not untried. In Baltimore and New Haven, potential dropouts became interested all over again in school when courses leading them into health occupations were introduced. Out of one group of pupils in this program, 60 percent received better grades in ALL subjects, and over half of one class of 23 students not only finished high school but are now in college.

Generally, the dropout rate for students taking occupational courses is much lower than for those taking general education courses. These students stay in school because they are motivated and are learning something which has relation to the world around them. They are not dealing in the abstract, but see clearly-defined paths and goals ahead of them.

The level of unemployment experienced by this particular group is significantly lower than that for the total population of the work force at comparable ages. All 16 to 19 year olds in 1969 experienced 12.5 percent unemployment. All school dropouts, 17.5 percent. Blacks and other minorities 24 percent. Figures on the unemployment rates of the academic and general education high school students who did not make it to the university, but went directly into the job market, are not available to compare with the 5.2 percent record of the students with skill training. Obviously, however, it must be well above the 5.2 percent figure to raise the overall employment rate to 12.5 percent. Of those individuals who upon completion of occupational training programs were not available for placement, 69.6 percent were reported as continuing their education full time.

Many aspects of the career education concept can be implemented as we presently work together to build a curricula which will be responsive to all students.

Urban communities throughout the nation should be deeply involved in the integration of career education in the curriculum in order to help mold the concept to meet the needs of inner-city students. Such a career education concept will require a great change of attitude on the part of educators (the public attitude is already far advanced beyond that of educational professionals), massive teacher retraining, and the development of guidance counselors to assist students in such a curriculum revision which would create a new system of education.

The main questions that we should be concerned with is how to prepare students for relevant education which will allow development of their fullest potential and offer them the full range of career options. Our educational system must change, and not just superficially; the meat of these curricula must change to meet the changing educational requirements of our society. In place of the unskilled worker, we must have trained technicians. Educational professionals must overcome some of our own prejudices and parental attitudes concerning education, and help broaden the choices available to all students. We waste our time, and we waste the talents of our students, if we delay curriculum reform one day longer. The need for change is evident. The career education concept could serve as a basis for change. We have an unprecedented opportunity to renew education in our country, and to develop a system which will be truly responsive to modern needs.

We have not been successful in the past in insuring equal educational opportunities. All of these efforts have been well intentioned, but as far as results are concerned, they amount to idle rhetoric. We have talked enough; the problem is well-defined. We do not need more rhetoric, but we do need meaningful education reform.

THE CURRICULUM - A VEHICLE FOR CHANGE

"The curriculum is the total of all school directed experience." Every individual is destined to participate in three general forms of activities and therefore the secondary school has three fundamental areas, (1) the social-civic aim, involving the preparation of the individual as a prospective citizen and cooperating member of society, (2) the economic-vocational aim, involving the preparation of the individual as a prospective worker and producer, and (3) the individualistic-avocational aim, involving preparation of the individual for the participation in those activities of life which primarily concern proper use of leisure and the development of personality. Since every individual is at once a citizen, a worker, and a relatively independent personality, and since those phases of his activity cannot be divorced, it follows that a fundamental principle in the organization of curricula is the conception that no curriculum which ignores or minimizes any one of those concepts can be acceptable. Vocational education and career education are essential components that must be kept in mind when planning curricula.

The activities in respect to curriculum planning that the teacher engages imply four major responsibilities: (1) the construction of courses of study, (2) the installation of courses of study, (3) the utilization of courses of study, and (4) the adaption of courses of study.

In the construction or revisions of courses of study, the teacher's duties are two-fold: (1) the personal participation in activities, and (2) facilitation of others' participation. The teacher must know the characteristics of a good course of study, but also be familiar and sensitive to the problem of inner-city youths and adults in order to build a sound curriculum.

The objectives of curriculum must be defined if education is to be meaningful for the individual and society.

THE TEACHER IS THE CORNERSTONE

The major responsibilities for revising the curriculum rests on the shoulders of the classroom teacher because the teacher is responsible for implementation of the curriculum. As the late President Harry S. Truman used to say, "The buck stops here."

Thinking and planning in terms of the educational philosophy should govern the teaching and learning experience. Teachers should be given every opportunity to familiarize themselves with the revised statement of aims through participation in the construction of every major division of the course of study or illustrative activities influencing installation, keeping in mind those items discussed earlier in the paper. The teachers and parents should be given an opportunity to review, re-evaluate and revised proposed curriculum, thereby providing a total community basis for understanding and utilizing the curricula to effectively meet the needs of inner-city youths and adults.

The problems of American schools is that we are living in a changing society and the schools have not kept pace. The problems which have affected the community as a whole have in turn been neglected in our current school programs.

The goal of career education is to assure that every student, when he leaves school, be prepared either for higher education or have the skills needed for entry into a modern occupation. All students would participate in career education, starting in grade K and continuing through grade 12, and beyond to post-secondary occupational training or the university.

The student who pursues mechanical drafting under the career education concept could decide later that he wanted to be an engineer and that route would not be closed to him. His earlier choice would not have been an irreversible one. On the other hand, the college-bound student who later drops out of college would have the skills necessary to compete in our society, and would not be viewed either by himself or others as a failure.

Career education will offer students a wide range of possibilities in many fields. It will be a totally flexible but interconnected system operating on a continual progression from elementary to secondary school, through two-year institutions, universities, and graduate and professional schools. The student, according to his own interests and abilities, could avail himself at any point along the continuum.

Career education can lead the student to a law or medical degree, or it can lead to equally desirable non-degree careers such as computer programmers, TV-radio technicians, jet engine mechanics, and others. It will offer the means for the mass of urban students to gain the skills and expertise to qualify for the technical, para-professional, and modern service-oriented careers which will account for the bulk of job opportunities in the future.

In designing curriculum we must be aware that about 10 percent of our nation's young people could be absorbed each year in unskilled fields ten years ago. Today it is down to less than four percent, and is decreasing rapidly. At the other end of the spectrum, job opportunities for college graduates in many fields are diminishing.

With this in mind, we must design a curriculum that reflects the needs of a changing society and recognize the fact that our education system as it exists today is outmoded and is in drastic need of curriculum revision - a point which I believe is beyond debate.

The majority of students who do not prepare for college receive general education courses which are boring and irrelevant to most, and contain little to spur their interest and enthusiasm. Even those who do enter college are often poorly prepared. The first year of college has become a remedial course to make up for the failure of our public schools.

The public has been registering its objections to the educational system by voting against bond issues and increased taxes for education. They are not voting against education as such, but against educational curriculum which has been producing millions of youngsters unable to read at the sixth grade level, and unable to do math at the 8th grade level. At the same time, the students are saying, "No" by dropping out or demonstrating against a system which they find out of tune with the world around them.

We must respond to this demand for change, and career education is one approach which certainly deserves close scrutiny as a means for making education relevant and useful for every student.

Some may object that the role of education is not job training, but is rather for the purpose of turning out well-rounded, cultured, and literate citizens. It is neither one nor the other, but it must be both. All education is career education. The student who enters medical school, or pursues a degree in teaching or the social sciences, is preparing for a career. That student should also have an adequate background in other subjects of a more general nature. The same should be true for the student who selects other career choices, which may require only a high school education, or one or two years of post-secondary education. Again, it is snobbishness which dictates that professional or scholarly careers requiring a higher academic degree are desirable, while the preparation for other careers has no place in our schools.

We in America have always believed that the function of a public school education was not only to provide basic education, but to prepare those who passed through their doors for a job. We believed that the high school diploma was the membership card for the entry-level job, and that students who went on to college to receive a baccalaureate degree would get an even better job. Education was believed to be career preparation, and economic security. It was expected to be relevant, not only occupationally but in other ways to equip the student to make his or her way into the life of the community.

Schools failed to keep up with changes in technology and today's job market to the point that a general high school program is of little value in preparing students for modern jobs. Now our schools must change their curricula so that a high school education once again has some value in preparing students for the job market. Since modern jobs require new modern skills, the schools must assume the task of teaching those skills and the curricula must change. For schools to continue to leave the urban youths and adults to job training by manpower programs is an abdication of responsibility. The growth of manpower training programs is a reflection of the failure of our school system. These manpower programs are comprised of thousands of individuals who are casualties of our public school curriculum. Blacks and other minorities who comprise less than 20 percent of the labor force make up 44 percent of manpower trainees.

But these programs are remedial in nature. They are not only remedial with regard to skill training, but most of them also include basic education courses to make up for basic skills poorly learned in public school. Manpower and on-the-job training must never be an escape hatch which allows our school system to avoid making the changes needed in the curriculum to provide education responsive to modern needs. That would indeed constitute a track system where a small number of students would receive college preparatory education, and the remainder would have the option of sitting out their time in high school or dropping out, prior to entering a job training program outside the school system.

Career education would provide the student with numerous avenues to choose from, built on a sound basic education consisting of the 3 R's: reading, writing and arithmetic. Career education is an evolving concept and still means different things to different people. If properly implemented, it could forge great changes in our antiquated educational system.

We shall and we must overcome the obstacles in the way of curriculum reform because the very survival of public school education hangs in the balance.

ISSUES AND PROBLEMS RELATIVE TO ACCOUNTABILITY

ACCOUNTABILITY IN HIGHER EDUCATION

by

A. R. Chamberlain*

I propose to visit with you today on the subject, "What are Universities For," or alternatively, "Accountability in Higher Education." We are all hearing the term accountability, generally from people who do not even know what it means, and certainly do not know what it means as applied to education. I intend to examine, first of all, the origin of the excitement about accountability. Secondly, I propose to discuss that in the context of colleges and universities so that we can determine how to use the term accountability in a context of performance auditing.

How can the rules of the game be defined such that colleges and universities can understand whether we get a good rating or a bad rating about what is being told to us? Certainly, if there are not definitions of what goals we are attempting to achieve, it is not particularly appropriate to carry through an accountability process against undefined goals. Let us examine several alternatives which are purported to account for the origin of this concept, as viewed from the level of the post-secondary educational environment of this country.

One of the alternatives that is quite popular is the proposition that the unrest of the late 1960's and early 1970's on our campuses generated by students and faculty so angered people in our society that they began demanding accountability. Perhaps that was a contributing factor, but I do not think it was very fundamental. Another factor that is frequently alluded to has to do with the perception on the campuses of economic insecurity. Worry over inflation, the trends in living costs, the level of government expeditures, deficits and high taxes, all contribute to a mood of little confidence in the economic future by our policymakers, faculties and school boards. Such concerns, it is perceived, can only be accommodated by attempting to reduce expenditures or controlling the growth of expenditures by virtue in introducing concepts of accountability, such as performance auditing, program budgeting and corollary activities. These concerns, of course, have led to a certain crisis of confidence and higher education has been caught in it.

A third major factor that has contributed to the desire to pursue accountability has to do with a lower priority for higher education in the overall social scheme of things in this country. And perhaps logically so. Given the increasing complexity of our society I suspect it is appropriate that higher education be taken off the pinnacle, at least to some extent, of being the highest priority social institution in society, to being put into the category of a very important, but not necessarily the most important, social institution.

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I assert that the real reason for this cry of accountability has little to do with any of the factors that I have outlined. The call for accountability is a call for control and reduction of expenditures. It is predominately a call for control by those who have the financial resources.

If it is true that the primary motivation behind the cry for accountability is a desire for control, then I believe what is called for is an entirely different strategy than when one perceives that accountability is simply due to unhappiness over student unrest. The indications that support my particular proposition are the activities across the land to reduce the autonomy and authority on the campuses, the increasing authority of all manner of coordinating or super-governing boards across the country, the increase of line-item budgeting by our general assemblies, the categorical funding or narrow restrictions of funding by the Congress and legislatures, and the enactment of mandatory teaching loads in some states. All of these are simply expressions of control under the rubric of accountability.

If we are working in an arena in which control under the rubric of accountability is the primary motivation, how can one succeed in continuing to develop vocational education, community colleges, state colleges and universities generally? In attempting to guide people to developing definitions that perhaps give us a fair chance to be appropriately evaluated, we have to start from a position of asking ourselves, "What are the major goals of universities and colleges?"

It is probably fair to conclude that during the decade of the 60's we in higher education did attempt to be all things to all people at every turn. When money was available there were plenty of us with a tin cup ready to carry out the activity that money called for, whether or not it had anything to do with any primary mission that we might identify for our institution. But that is no longer true in most of higher education. Most of the campuses now are ready to accept that we no longer have to respond to every opportunistic situation in front of us. We no longer feel that we must admit every student who has any kind of interest in any university program, nor that we must initiate new programs simply because a few students find out that we do not have a particular program in which they are interested. I think we have finally reached the stage, though it has been slow in coming, when people ask what institution you are from that they will not have as the next question, "Well, how big is the place?" All of you have listened to this routine which assumes once it has been determined how big your institution is that its quality has been defined. We are beginning to get through to people that size is not synonymous with quality. As a matter of fact, it is possible that in some instances exactly the opposite is the case.

We can begin to get some public credibility for the idea that each institution will have a particular role. That role will call for a correlation between mission and size of program that relates to both educational effectiveness and financial efficiency. This is the beginning of meaningful accountability.

In talking about definition of role, let us examine a few things which I assert are not proper functions of colleges and universities. Unlike the period of the 60's when it was thought we should do everything, if we can now get acceptance, there are some things that colleges and universities should not do that the delimiting approach by itself will assist us in formulating definitions of those things we should do and against which we can be evaluated.

I do not think that the university should be expected to be a custodial institution responsible for keeping non-students off the streets or out of the job market. Some of our economists will defend that one of the functions of colleges and universities is to keep people out of a job market until such time as the job market truly needs them. We should not be expected to perform such a function. Obviously, too, I do not endorse the idea that it should be expected of colleges and universities that we be a haven for non-students.

Institutions should not be construed to be adjustment centers to help young people develop good self-concepts and solve personal problems. We should have first-class counseling and psychiatric programs available, at least in the diagnostic arena, but it is not our function to provide the adjustment center function on a long-term basis for young people.

Institutions of higher education should not be expected to be recreation centers designed to entertain and amuse students. I have enough involvement in athletics to believe it is essential that universities and colleges have athletic programs that provide entertainment, but they should not have to perceive that a purpose of the institution is to serve as a recreation center for their community or for simply the amusement of the young that may be hanging around.

The colleges and universities should not be social research agencies to which society delegates the responsibility for solving current social ills. In other words, colleges and universities should not perceive themselves as social action agencies. Those of us in universities should construe ourselves to be one of the most effective sources of knowledge and studies upon which action plans can be formulated by the public policymakers. The university should not be the social action agency.

Universities have to accept that they are not in a position to carry out many of the remedial functions that perhaps should have been done in the elementary and secondary schools. This is a function that must be done, but I do not believe it is appropriate for the major universities. Certainly some of our community colleges and high schools can and should provide remedial programs that will assist young people in achieving subsequent goals.

Having considered this series of negatives, we can now begin to look at the things that colleges and universities can and should do. We can now get through some of the public disenchantment of the American taxpayer and in turn begin to achieve definition of our goals in a manner that will make accountability more meaningful.

What are we for? The overriding premise is delineated by asking oneself, "What can the college or the university do best?" What we can do best is provide an environment for learning. That may sound trite and simplistic; but to provide a true environment for learning on a campus is much more than providing a professor in each classroom or laboratory. An environment for learning necessitates both an in-the-classroom and out-of-the-classroom set of tools and resources that can assist young people to learn.

But it is even more than that. The institution is not carrying out its function unless it also provides an environment for faculty to learn. I believe that faculty are simply students who are further along in their intellectual development than the students that appear before them in their classes. So, if the university is to do its job, its primary reason for being is to provide a learning environment for both faculty and students--and administrators as well.

Given the above direction, we can narrow down the goals in a sufficiently definitive manner that an accountability structure can be created that makes sense. The structure should make sense in terms of measuring the effectiveness of the learning environment and in assessing financial efficiency. It could be a participatory system in which faculty, students and the administration, as well as the external people doing the accountability analysis, all could feel that the accountability study output would be helpful, rather than simply a witch hunt.

In carrying out such a plan we need to examine job definition for each position in such a manner that performance can be evaluated. This can be done by several established techniques.

Given that we have the ability to discriminate between jobs as well as between programs, the question remains, "What kind of learning is appropriate on a university or college campus?" Here we come closer to the special interest of each of you; career education or career orientation.

Career education certainly should stress reality in the classroom but at the same time it should not smother young people in dubious tradition. "For every child, learning, in itself, is a sufficient reward for this tiresome journey," according to one of your colleagues, Sid Marland. If that happens to be one approach to considering the learning situation, who should participate in attempting to put meat on this particular skeleton? Many in our society are saying, "Who needs a college learning opportunity?" Some say that only one out of five jobs in the coming decade will require a college education. The most important thing to consider is the need for diversity of opportunity on different social/institutional bases that permit students to discriminate among the institutions they want to consider attending. With that discrimination in mind, each kind of institution can then be held accountable for its explicit mission. An institution like Colorado State University should not carry out vocational-technical programs that would be in competition with what many of our community colleges can more effectively do. But Colorado State University does have a primary responsibility to assist in the development of the leadership talent that can be employed to carry out the teaching functions in vocational-technical institutions.

Who needs a college education? Who needs a university education? I am quite concerned that our campuses still do not really understand how to sort out their respective roles. I am also concerned that our university faculties generally are continuing to convey to too many young people that the only way to go is to attain a master's or doctoral degree. It is true that there will be more opportunities than some of the current national rhetoric indicates for people with advanced degrees. We are overreacting in trying to reduce the graduate education program of this country. On the other side of the ledger, it is time for us to do what the framework is being laid for; enhancement of vocational-technical or career-oriented kinds of education. That really means career orientation at several levels, whether it be a one-year post-secondary program, or whether it be a university program at the bachelor's, master's or Ph.D. level. It is feasible to give education more career emphasis than was seen during much of the 60's. It will behoove us all in colleges and universities to try and make that point to our young people.

It is good to see some of the quick shifts in student interest that are taking place. Students are more alert now than they were even 12 months ago, certainly much more alert than they were three years ago, to changing job markets. They are asking such questions as, "If I major in this particular department, will I find a job at the end," or "What are the odds that I might find a job at the end?" It is good to see the students do that, whether they are thinking of a one-year program or a ten-year program. Given such an orientation of students, I hope college and university faculties will do a better job of being truly honest with young people in telling them, realistically, whether there are jobs at the end of a particular academic program. If we fail to do this, disenchantment will continue between our clientele and the institutions. I, of course, am optimistic about such things and think we are moving fairly rapidly in the direction of systems analysis of our overall state and national programs in a manner that will permit better choices to be made by young people.

What must be the response of higher education to some of the new demands of society? Higher education was easily seduced into assuming a societal role far beyond its capabilities and I reiterate that we must not get drawn into such a trap. We need to recognize that one of our responsibilities is to acknowledge and to reinforce that higher education is not the appropriate alternative for every American. We should assert that higher education has and will continue to have a major and necessary role in our society, but it will be a more limited and directed one.

We must not overlook another point, probably more fundamental to getting the money over the long term to support the programs in which you are interested and in which all of our colleagues in higher education are interested. This point relates to the behavior of the human being. We can talk all we want about whether or not we are emphasizing too much career education, whether or not we are emphasizing too much liberal education, whether or not we are emphasizing too much engineering, veterinary medicine and so on, or whether or not we are pursuing too much the off-campus learning opportunities such as the university without walls. The most important underpinning element of all that will stand higher education in good stead, regardless of the political temper of a given period, has to do with the behavior of the human being. That is the individual's innate need and desire to learn. Not necessarily to learn any particular thing, but just the human being's need to have the opportunity to learn. What is important is that human beings need and want to learn from the time they are six months of age to the time they expire, or at least up to the time of senility. That particular human need to have opportunity to learn is the major supporting pillar on which we can always go to our publics in seeking money to support the educational programs in which we are all interested. That particular need, when reinforced by the kinds of programs in which vocational-technical or career-oriented education is involved and by building on such concepts as the land-grant institutions' tradition of professional education results in an absolute assurance that those of us involved in the kinds of education we are, will in subsequent decades continue to be able to obtain financial support for our programs. Granted, we would always be able to utilize more money than we are going to get. We can have confidence that we will always be supported, but not necessarily to the level of our desires.

Given that we are going to be supported, and given that we are defining our goals more carefully, then we have nothing to fear from the societal drive toward accountability. We have nothing to fear from the public's aspiration to bring into being accountability systems and imposing them on us. But while we need not fear accountability, we should come forth with proposals for mechanisms of achieving accountability, measured against yardsticks that we think make some educational and financial sense. The concepts now related to accountability are most frequently oriented to holding one accountable for credit hours, for FTE staff, or for the percentage of those students enrolled who actually got a degree. Criteria of this nature miss the fundamental point of what takes place in the mind of any person, faculty or student, when they are on campus.

Higher education needs to come up with mechanisms to give indications of the value added to each individual in the system regardless of the level at which he or she started at the time they joined the system. That is very difficult to do, though some of our national management studies are attempting to do so. Our behavioral psychologists are going to have to help us more than they have to date. If we assume an aggressive posture now and attempt to develop measures of educational inputs and educational outputs that can be quantified in educationally-meaningful terms, I believe we can meet this accountability syndrome, even though it is control oriented, in a manner that will further reinforce that institutions for post-secondary education will continue to be financially supported at levels that will permit us to carry out most of the programs we wish to pursue.

In closing then, I would like to challenge you to not put more of your energy into complaining about the fact that everybody wants to hold you accountable and that there are a number of auditors and outsiders trying to probe into your affairs. Rather, devote your energy to dealing from a position of positive confidence that you have everything going for you in terms of the sector of education in which you are functioning and in terms of your working in an area that fulfills a basic human need. Use that extra intellectual talent which you have to come up with proposals for ways to measure inputs and outputs that can have accountability systems applied to them. We can then rest assured that whether it is the decade of the 70's or the decade of the 80's, we will have a viable, aggressive, dynamic and socially-related post-secondary educational system of which we can all be proud.

THE ISSUES ABOUT OBJECTIVES[1]

by
Robert E. Stake*

Ubiquity. All teaching has its purposes. Countless objectives are simultaneously pursued by every teacher. Some objectives are explicit; some are implicit. Objectives and purposes are also known as aims, goals, intents, and hopes. To understand the objectives people have, you also have to know something of their needs, their fears, their expectations, and their dreams.

Multiplicity/Diversity. People have more objectives than they can list. Different people have different objectives. Some people have objectives that are contrary to other people's objectives. Each person has objectives that compete with, and even contradict, some other of his own objectives. A list of objectives is an oversimplification of what the group wants and a misrepresentation of what any one individual wants. Nevertheless, it will sometimes be useful to have lists of objectives.

Behavioral Specificity. A stated objective always represents a collection of desired behaviors (or phenomena). The more specific the statement, then the smaller the collection, the less the misunderstanding about it, and the less useful it is to represent some of the complex purposes of education. The more general the statement, then the broader the collection of behaviors the more the misunderstanding as to what is and what is not included but the more likely it can be used to represent some of the complex purposes of education.

There is no language that perfectly represents what a teacher aims to teach. It is helpful in some cases to state desired outcomes in terms of student behaviors--but not always. The people who hold the objectives should decide which language expresses their objectives best.

Responsibility. All teachers and all administrators are responsible for indicating the school's objectives just as they are responsible for arranging environments, providing stimulation, evoking student responses, and evaluating. But each teacher and administrator does not share equally in these responsibilities. To the extent that responsibilities are assigned, each teacher's assignment should capitalize on what he can do best. Few of us in the classroom are skilled in stating objectives. Those who are not should be invited--but not required--to develop the skill of stating objectives. A teacher's talents should be used to adapt teaching to the immediate circumstances, or to motivating students, or to appraising responses, or to whatever he is best at.

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Obviously, stating objectives is not a prerequisite to effective teaching nor should it be considered a universal remedy for poor teaching. Sometimes--but not always--it will help matters to have a teacher state his objectives.

Priority. Different objectives will have different priorities. Priorities indicate how much effort (money, time, heart, etc.) should be allocated to each objective. Priority is based on need, resources available, and the probability that a given use of resources will alleviate a particular need. It makes little sense to be specific about objectives and vague about priorities.

Ephemorality. Objectives and priorities, for any person and any program, change with time. Statements of objectives, if to be used to mean something for an ongoing program, should be updated periodically.

Disclosure. Usually high-priority objectives should be apparent to both the teacher and the learner. Sometimes it will increase teaching-learning effectiveness to make the students more aware of objectives; sometimes it will not. It will not help to identify objectives which at the moment seem to the student irrelevant or contrary to his self-concept. The teacher should not deceive himself or his students by implying that he has indicated (or should or could) all the objectives involved in the learning. Of course, the teacher should candidly discuss the objectives with students who have a concern about them.

Evaluation Utility. Some knowledge of teacher objectives is necessary for a complete evaluation of a program. Specific statements may or may not help. The statement that evaluation cannot occur without specific statement of objectives is nonsense; evaluative judgment of merit and shortcoming does not require an awareness of objectives. Evaluation projects can be organized around learning activities, management decisions, or teaching problems just as well as around objectives. Objectives may be more usefully considered *after* studying program activities than before. The choice is made by deciding why the evaluation is being done and who is it being done for. It's a matter of judgment.

ACCOUNTABILITY IN RELATION TO VOCATIONAL PLANNING

by
Roman C. Pucinski*

I want to thank Dr. Larson and Dr. Valentine for the opportunity to speak to you today on the subject of Accountability. As I sat here during the past day and one half listening to the speeches, I was impressed with the high degree of sophistication with which you approach curriculum development and its implications for career education. As we look back to the early 1960's when I first became interested in your field, as a member of the House subcommittee on education, the progress you are making is most impressive compared to a decade ago.

Our job now is to bring up-to-date our critics who have been historically against vocational education and continue to be so because they seem unaware of what is taking place today. You should be congratulated on being here.

But my responsibility this morning is to discuss some of the problems we have and the subject is Accountability. You may have read a couple of weeks ago that the Metropolitan Museum of New York has just re-evaluated what they considered to be their priceless paintings - and found that 300 paintings had to be downgraded because they were not executed by the famous painters whose names they bore. This massive re-evaluation was forced upon the museum and has cost the museum tens of millions of dollars of losses because art scholars began challenging the validity of these paintings and, costly as the results were for the museum, it took this bold step to preserve its integrity. America's educators, particularly those charged with the responsibilities of curriculum development, must demonstrate a similar boldness in revising curriculum standards if we are to preserve the integrity of the American educational system. We're living in a very changing society.

We are here today to discuss, among other curriculum issues and problems, the concept of educational accountability. Obviously, this is a concept to which many meanings attach.

Efrem Sigel and Myra Sobel say, "Accountability is a demand to know what, if anything, has been accomplished with the money."

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Judith Seltz says, "Simply put, accountability is the honoring of promises made by educators to children and their parents.

Dr. Leon Lessinger, professor of Education at Georgia State University and a strong proponent of accountability defines it as a three part policy involving: "the measurable accomplishment of students, an independent educational accomplishment audit or a test of the student's progress by someone other than the teacher, and a public report of the success or failure of the program."

Professor Lessinger further states that, "A more sophisticated public is demanding evidence that every Johnny can read and that he has been provided with the other basic skills necessary to employment and a useful life in a complex society. The public is demanding product reliability . . . and will no longer accept mere assertions of professional superiority . . . Application of a new process of accountability is an activity we can use to confront some of our most critical education dilemmas."

On the other hand, Howard Storm, less enthusiastic, sounds what amounts to a word of warning: "We have educators now who are enamored with the word, 'accountability.' Although there is nothing wrong with the word, there is a great deal wrong with what these gentlemen would hold us accountable to. They want teachers - and, in turn, students - accountable for discrete bits of information and they want teachers to specify in behavioral terms just what it is they want the student to accomplish. Thus to appreciate poetry is a poor objective, but to demonstrate knowledge of metonymy is precise and accountable . . . Behavioral objectives run riot is but a small step to a cybernetic world of push buttons. What's good for Rand and the Pentagon is not necessarily totally applicable for kids. Accountability is a trap unless one balances such a notion with human intentions, for we are not machines. We are flesh and blood who desperately want to appreciate all aspects of life. We, as Dewey urged, should celebrate life by reconstructing it."

There you have it. You can see that the educational community is sharply divided on precisely what we mean by accountability and if history is any teacher, and it is, we can expect for sometime in the immediate future a national dialogue on educational accountability, and one which will have many ramifications.

Taking a position for or against accountability is the newest "in" thing in education. And it is somewhat amazing for me to see the growing lexicon on this entire subject.

You can always count on the phrase makers and the alphabet soup devotee to get together whenever a new dialogue comes into being. Let us then look at some of the new alphabet taking shape in systems that have been suggested as means by which accountability may be explicated and realized:

> P.P.B.S. (Planning, Programming, Budgeting System) - a management technique which was designed to identify the relationships between the quantity and quality of products and the costs of alternative methods of production.
> PERT (Program Evaluation Review Technique) - a management tool designed to assist school personnel to describe and monitor the operation of a program or system.
> Systems Analysis - a variety of operational research techniques including computer simulation which will define and analyze the components of a system and their interaction.
> Performance Contracting - a school system specifies desired outcomes with a desired pupil population and enters into a contract with an agency for the provision of educational experiences that will produce the desired outcomes in the pupil population. Guaranteed performance contracts specify that the contractor will not be paid if the specified outcomes are not achieved.
> Turn-keying - the process whereby a program established and operated effectively by a performance contract is adopted by a school system and operated by its personnel.
> Program auditing - the independent examination of an educational program or performance contract to verify results, processes, personnel, and the contents of the activities.
> Education vouchers - suggests a means by which parents could buy in a "free market" the particular school program they selected by presenting a voucher for tuition issued by a school district or government agency. The implementation of such a plan implies the availability of financial and program audits, standards of educational quality and evaluation data to potential parent purchasers.
> Incentive pay - the rationale suggests that teachers will be paid on the basis of the performance or achievement of their pupils.

As a matter of fact, we are getting to a point now where so many educators are so busy divising new techniques for accountability that we lose track of the basic thrust in education.

I am in no way downgrading this growing demand for accountability.

As Chairman of the House Subcommittee on General Education for several years prior to last November, I have been well aware of the growing unrest among taxpayers with their educational system.

I have tried to play a key role in turning the system around so that education in the '70's would be more responsive to the needs of our students and our nation.

It is for this reason that I view with some skepticism the growing emphasis on accountability as has been suggested in the current dialogue on the subject.

I think that Henry Dyer stated the case well when he said:

> "It must be constantly kept in mind that the educational process is not on all fours with a manufacturing or industrial process; it is a social process in which human beings are continually interacting with other human beings in ways that are imperfectably measurable and predictable. Education does not deal with inert raw materials but with living minds that are instinctively concerned, first with preserving their own integrity, and, second, with reaching a meaningful accommodation with the world around them. The output of the educational process is never a finished product whose characteristics can be rigorously specified in advance; it is an individual who is sufficiently aware of his own incompleteness to make him want to keep on growing and learning and trying to solve the riddle of his own existence in a world that neither he nor anyone else can fully understand or predict."

In my judgment before we can intelligently discuss accountability, we ought to perhaps at least try to agree on some of the problems that this newest rage in education poses.

Richard Harsh has raised some very valid points when he asked among other things what the schools should be accountable for. Are they to be held responsible for all aspects of cognitive, affective and psychomotor development and accomplishment?

Such implies that there must be explicit and detailed statements of the anticipated outcomes in behavioral terms that are susceptible to observation and measurement. (Thus, the concept of educational accountability has been closely tied to the concept of behavioral objectives.) It is held that accountability is dependent upon clearly defined objectives. I agree. I think that I favor, what may be called the Tylerian approach, of determining objectives in terms of a more global sense and then defining more precisely the behaviors, i.e., behavioral objectives, which indicate progress toward the global objective. This two-part process is essential if we are not to throw out the baby with the bath.

Harsh asks further: "*Who should be accountable?* Cold logic would suggest that each person whose task it is to influence learning - teacher, principal, curriculum coordinator, counselor, or whoever - should be held accountable for *precisely that part of the educational outcome which he can effect directly through his efforts*. Ambivalence to such specification is born from a reflection upon the complexity of human behavior as well as the infinite interrelations of environmental effects.

How shall accountability be established? Obvious to all is the need for a method of relating input factors to process and outcome in a manner that will permit appropriate attribution of the outcomes to the various input elements. Accountability requires a comprehensive information system for providing reliable information on the input, content, process, and products of the educational program.

By whom should accountability be determined? The insistence that self-evaluation is biased has promoted the notion the independent -- external auditors or evaluators are desirable. On the other hand, program participants have recurrently voiced suspicion about the relevance of the process, measures, and data treatments that will be used as a means of judging the effectiveness of educational programs."

I submit to you here this morning, with all due respect to this growing rhetoric on accountability, the average citizen and parent of school children is looking for a substantially less sophisticated method to judge whether his child's education at least the elementary and secondary level has been a success.

The fourth annual Gallop Poll on public attitudes toward education gives us a pretty good insight into how the average American parent wants to judge his child's education.

In response to the question: "People have different reasons why they want their children to get an education. What are the chief reasons that come to your mind?" Forty-four percent of those responding said they want their children to get an education "to get better jobs." Forty-three percent said, "to get along better with people on all levels of society." Thirty-eight percent said "to make more money - achieve financial success." Twenty-one percent said, "to attain self-satisfaction." Fifteen percent said, "to stimulate their minds." Eleven percent said "for miscellaneous reasons."

These responses show a Gallop conclusion that the public thinks of education largely in a pragmatic way. This heavy emphasis on material goals, at the expense of those concerned with intellectual and artistic development, should come as no shock. Americans are a practical people who believe firmly that education is the royal road to success in life. Too many of our academics seem to want to forget or ignore this.

The fact that the large percentage of American parents want their child to get an education so they can get "a better job" should be a sobering reminder to our educational institutions that real accountability lies in whether or not the child can even get a job upon graduation.

As one who has spent fourteen years carefully viewing America's educational concept, I agree with the average American that the true test of education is whether my child can become a useful citizen of society by above all, getting a meaningful job.

In my judgment this is the new challenge for academia in general and vocational education in particular. It is even more of a challenge to you as curriculum developers.

I have stated many times, our critics notwithstanding, the last third of the 20th Century belongs to the vocational educator. If you fail, the whole system fails. No one is more important in this entire spectrum of vocational education than you curriculum developers. You have a huge challenge ahead of you, and I think you can meet that challenge.

I am so pleased that a presidential commission on educational goals last year recommended that we bury once and for all the general education curriculum and devise in its place an educational system which will put college preparation and career education on an equal plane. Make them co-equal in the learning process so that our young people -- all of them -- will be prepared for the world of work through career education, and if their talents dictate, to go on to college if they so wish. (This report is extremely important in recognizing the need for career education for all our young people).

May the era of credentiability rest in peace. You as vocational planners have a range of responsibility unprecedented in the history of American education, for this new emphasis on career education is the keystone of finding answers to many of our problems.

We talk about productivity and we talk about blue collar blues. We can achieve neither productivity nor overcome blue collar blues within the basic structure of our present educational system. All the demands for accountability will not change the results.

The system itself must be changed.

The teacher alone can no longer be held responsible for the failure of her students when we impose on her an educational curriculum that bores her students and gives them little meaningful challenge.

I hope that this conference can put into sharp perspective a firm determination that the dialogue on accountability in education will find true meaning only when the curriculum we present young Americans will have a meaningful component of vocational education and provide our students with a respectful awareness that sooner or later, each of us as human beings must enter the world of work in one form or another.

You have an enormous challenge at a time when much of academia continues to block your efforts.

Career education means different things to different people. Let us not be "hoodwinked" into taking the old general education course, let them put a new dressing on it, call it career education, give the youngster a few slides and what not about job opportunities, and call this a turn around of the system. You have demonstrated to me in the day and one half there is more to career education than "window dressing." What you have been talking about must be an integral part of the educational system. Otherwise we will have failed and be back where we started. A meaningful career education plan must have a vocational education component, otherwise we are kidding ourselves, parents and students.

We're a country of change. Why should we all of a sudden say to our students that we are not going to offer career education because he might change his mind. Modern technology forces the average American to change his skills five to twelve times during his life. Why should we be shocked if we teach "junior" one thing and when he leaves high school he goes to another job. What's important is that this child has a "fall back" position if a job doesn't materialize. That's the value of vocational education.

I'm pleased that you have this conference. You have one of the biggest challenges in this country today. Your job is tough, there is no greater challenge in my judgment than the job of curriculum planner and developer. How well you discharge your duties and how well you respond to the needs of America with the changing requirements for job skills and with the legislative tools we gave you in the 1960's and the new amendments in 1970 will determine the future of vocational education.

I have every reason to be extremely hopeful. Our studies show impressive use of these new laws by schools throughout our land. We are depressed, however, with high levels of government trying to downgrade vocational education. But as they say, "hang on, a better day is coming."

I'm confident if American education is to be saved, and obviously it must be saved, then we must train young Americans for jobs and people like you in this room will and can save our school system. Thank you very much.

BASES FOR CURRICULUM DECISIONS

SOCIAL ASPECTS AND CONSIDERATIONS OF CAREER EDUCATION

by

L. Sunny Hansen*

International Perspective

About 12 years ago I had an opportunity to spend a year in Norway studying Norwegian educational reform. At that time Norway, a small, democratic, homogeneous nation with 99 percent literacy, was in the process of changing its school structure from a seven-year folkeskole to a nine-year youth school. At the heart of the educational change was a desire to broaden the role of the school, to provide students greater opportunity for choice, to open up options in a system that previously had been fairly prescriptive and tracked, and to provide an opportunity for students of diverse backgrounds and abilities to come together for nine years of common education but also with opportunity to explore their own unique interests and abilities through an expanded curriculum and co-curriculum. The ultimate goals were that the new plan would open equal educational opportunity for all and that students would be better prepared to choose vocational goals. A counselor was to be introduced in the system for the first time to assist in the process of providing educational and vocational guidance for all. The reform was legislated in the School Reform Law of 1959 and was to be implemented by the Ministry of Church and Education under Norway's national system of education. In other words, politics and education were acting together to achieve ends which the society deemed good. They were making major educational changes to make what already appeared to be a good educational system even better.

What is of special significance for this curriculum institute is not only that the change drew heavily from the model of the American comprehensive school but that there was a strong and deliberate focus on vocational orientation through curriculum in grades 6, 7 and 8. Of additional interest is that this educational reform in Norway came about the time of another significant event which has had an impact on American education. Sputnik, as we are well aware, provided an impetus in this country for the discipline-centered curriculum changes of the 60's which sought to improve subjects - especially math and science - through such projects as SMSG, PSSC, Project English, and Project Social

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Studies. Thus, we have the irony of a country emulating us and broadening the focus of curriculum at a time when we began to move in a direction of tightening up, especially the academic curriculum. We are also aware of the curriculum movements prior to the '60's when there was at various times focus on child study, the core curriculum, and the Dewey Action School.

I mention these things because I think it helps us to get a better handle on what is happening to education in our society when we add a little historical perspective to the present context of curriculum reform today - which has in the last two years been labeled career education.

Lest we think we are in the midst of a revolutionary new movement, Herr (1972) reminds us. . .

> "many of the elements which appear to be incorporated in present descriptions of career education have been advocated in one form or another for at least the past century."

Whether "old wine in new bottles" or "new wine in old bottles," the best of current and emerging systems "are more broadly conceived, have drawn more heavily on the behavioral sciences for an understanding of the developmental needs and motives of clients, have more effectively organized the institutional resources in the schools and community agencies where guidance is performed,". . . and appear to have expanded aims and bolder strategies (Hansen and Borow, 1973).

National Perspectives

Besides the international curriculum developments, there also have been some national developments in career guidance which were precursors of career education - pragmatic efforts of humanitarian social workers, vocational educators, and counselors which were focused on the needs of human beings to develop and adjust to an occupational role. There are three major thrusts, two of which go back to the turn of the century, one to the mid-forties. They are 1) vocational education, 2) vocational guidance and 3) career development. Let me deal with each of these briefly.

Vocational Education. Most of you as vocational educators are more familiar with its history than I am. But I think it is important for me to call attention to the impact of vocational education back in the 1890's when it was recognized that individuals needed more training and better skills to prepare them for a complex industrial world and that manual training or work as an apprentice with a master craftsman would provide important kinds of experience that had been lacking prior to that time. Although it had a primarily cognitive information and skill orientation, vocational education gave rise to the first national vocational guidance movement. (And it is largely through vocational education legislation and funds that major innovative programs in career education are under way.)

Vocational Guidance. About the same time an idealistic social worker named Frank Parsons became concerned with providing a new set of human services and set up his Vocations Bureau in Boston. Parsons, who is generally considered the father of vocational guidance, had a fairly simple and explicit model for helping people vocationally. He said you help them obtain information about jobs - occupational information about requirements, worker characteristics, and working conditions; you help them to look at themselves - their abilities and interests; and then you engage in "true reasoning" about the two - and make a vocational choice. That "true reasoning" has come to be called "counseling" in our modern society. And with the advent of the psychology of individual differences and the test and measurement movement, there was developed a variety of tools and instruments through which decisions could be made for people.

The problem, however, is that the tests given to get objective measures of differences between students became tests for selection and placement, especially used by colleges and industry. And the model presumed the existence of an expert who had the answers and could tell you which way to go. Thus the original Parsonian approach, created out of humanitarian motives to meet a societal need, became a matching model of individuals and jobs with essentially a prediction and placement function. And of course that matching model has found expression in what has been the chief vehicle for vocational guidance in the schools, the ninth grade careers or occupations unit in which the young person looks at himself, studies a couple of occupations and chooses one that he wants to be. One of the problems with this model is that it was oriented toward a stable job market, unchanging individuals, and assumed a once-for-all career decision at a given point in time, all of which have proved inappropriate for modern times.

Career Development. Since then - about the mid-forties and early fifties - some other important educational developments have occurred. With the emergence of counseling psychology and especially the work of Carl Rogers, there was a strong focus on the self - on awareness of self - linking personal feelings about self with goals, achievements, aspirations and external realities.

Concurrently a new line of inquiry was going on at Columbia when Ginzberg identified three stages of vocational development and Don Super and his associates began their longitudinal Career Pattern Studies and in effect helped create a new discipline and a theretofore neglected aspect of human development called career development. Their unique contribution has added a dynamic dimension by helping us look at the developmental aspects of occupational behavior and a new construct called vocational maturity. They defined career development as self-development. While the study of how people develop vocationally - their occupational socialization - is a relatively new field of study, there are some things that we have learned not only about adult workers but about occupational roles and motives of children and youth, as well.

And this looking at career development as self-development using the work world as the vehicle for self-exploration - has set the stage for what is happening today - that is, in effect, a convergence of these three historical trends in career education. This focus in many ways appears to have moved us toward a concern for the total curriculum: rather than improving subjects in bits and pieces, it has brought us closer to what Goodlad (1968) back in 1966 called a "humanistic curriculum" based on human interests and values. Even then he was suggesting the need for attention to the entire curriculum and the larger questions of what we are educating for and why. And as we enter the decade of the '70's we are offered a new framework for curriculum which provides a comprehensive umbrella for unifying learning experiences around the career needs of youth and adults and attends to the dual concerns of the individual and society.

Social Dilemmas of the '70's

As with Norway, we are trying to make a good educational system better. We are well aware of the social issues and dilemmas of the '70's which make it imperative that we seek some additional solutions. I would like to highlight some of these larger social issues which in my opinion relate to occupational dilemmas.

1. Changing Meanings of Work in the Human Experience. The message has been coming across loud and clear from a variety of sources - that people are becoming more alienated from their work, that they are not getting the satisfactions expected and that their poor work adjustment manifests itself in absenteeism, lack of productivity, and even sabotage. There has been a plethora of articles in newspapers and magazines in the past two years with essentially a similar message - the meaninglessness and dehumanization of work, especially on the assembly line. The workers are saying that they are concerned about more than just the economic security of the job - they also want what Levenstein

(1965) calls "psychic income" - personal satisfaction in what they are doing and in the work environment. The problem was poignantly presented in the CBS TV Documentary on the blue-collar workers on the Detroit assembly line last July.

Another aspect of the problem is the message from some of the students who are not accepting our traditional work values. They are saying, "Don't force us into your traditional jobs; help us find work that will help us change and improve society. We want activities and jobs that will make society a better place." They are concerned about the roles various occupations play in fulfilling social and economic needs. While most of the people I know have to work and want to work, for some work does not hold the central place in life that it once had. Increasingly we are seeing the phenomenon of the adult career shift among established workers who are tired of the rat race and want to change their life style. Some are saying that while the role of worker is important, they are also concerned about their roles in family, politics, and community. Indeed we are seeing a variety of work patterns influenced by different work values, changing leisure patterns, and reexamined individual needs and goals.

2. Changes in the Structure and Composition of the Labor Force. While it is not necessary or possible for me to deal with all of these, I would like to cite some of the major ones which are part of the occupational dilemmas. The first - one we have heard quoted many times - is that 80 percent of the jobs of this decade do not require a college education - this at a time when the great American dream of college for everyone still seems to dominate the American imagination. Among other significant changes are the increasing gains for Blacks in the labor force which - though far from adequate - are encouraging. Another is the fact that more and more women are entering the labor force and are asking for equal opportunity in education and employment. We have also become acutely aware of the problems associated with employment in the past two years - an anomaly in which we do not have enough skilled workers in some fields, such as health services and accounting, but overtrained and consequently underemployed workers in others, such as teaching and engineering. We are also aware of the fact that with technology some jobs are disappearing through automation and that others are being created and that new kinds of jobs are emerging with the efforts to solve some of the major social problems associated with housing, health, ecology, and civil rights.

3. Problems Associated with Institutional Dropouts. We know that in spite of the many programs of the late sixties to provide skills, jobs and training for those unprepared to enter the job market (the NYC, the Occupational Information and Skill

Centers, MDTA, and the like), the high school dropout problem is still very much with us. Marland (1972) reminds us that there are still around 30 percent high school dropouts each year, students whose needs are not being met by the heavily academic or general curriculum.

But another kind of dropout has come to the fore in the career education movement. And that is the college dropout. Again we are told that of the 40 percent who typically go on to college, the ones counselors are accused of spending their time with, only half of those will obtain a four-year degree, the others left to flounder without alternative goals or guidance. The net result is that 80 percent of our school population does not get adequate vocational guidance and placement assistance (Marland, 1972).

A third kind of dropout has entered the work scene and that is the corporate or institutional dropout - the adult worker, already mentioned, who is tired of the rat race in which he finds himself and the roles his work requires. This kind of dropout is epitomized by the Law School Dean who resigned and moved his whole family to the Minnesota North Woods and the brokerage firm executive who resigned not only from his job but from all his board memberships to engage in a year of self-renewal and find another career. Increasingly we are seeing this kind of exit-retraining-re-entry pattern among workers who are not willing to spend their lives with the same job or company so they can obtain the 50-year watch.

4. Problems Associated with the "Walling Off" Dilemma. With the prolonging of education until 16 and the employers' insistence on at least a high school diploma for most jobs, we have seen many youth isolated from the work world. Our traditional programs have forced students to choose early between academic and vocational education, with the result that the vocational students have been the ones given a direct exploratory experience - which unfortunately has been looked on as something you do if you can't handle the academic curriculum (Taylor, 1972). Except through summer and part-time jobs, other students have had little opportunity to know the work world - how it is organized and what the options are - or to really test themselves in it. The traditional curriculum has served to wall off the school from the community.

This walling-off of the employment-bound from the college-bound has resulted in an unfortunate dichotomy in which work is something for the employment-bound, and college-bound students defer as long as possible thinking in vocational terms. The walling-off has perpetuated a curriculum in which academic subjects and vocational subjects have been in their own boxes and a tracking system which negates the very purposes for which the comprehensive high school was created. It has caused a fragmented curriculum which has not capitalized on the possible ways of integrating academic and vocational subjects to make school more relevant to the present goals, future plans, and preferred life styles of students. I believe Robert Frost's words are appropriate here when he said, "Something there is that doesn't love a wall - that wants it down."

I think a lot of human beings in the schools are tired of the artificial walls that have been created to separate them from one another - college-bound from employment-bound, academic teachers from vocational teachers, teachers and students from people in business and industry - and I think career education speaks most forcefully to this dilemma of getting the walls that serve only to obstruct human potentials down.

5. The Information Deficit Dilemma. One of the things we have learned through career development research is that students and often adults make career decisions with an information deficit. Katz (1963) has put it clearly when he says, regarding career decision-making, that students "do not know what [information] they need, they do have what they want, and they cannot use what they have." There is considerable evidence, for example, that students have a paucity of information about occupational and educational options; that they often have misinformation; that they make career choices from a very limited range of occupations often based on myths and stereotypes. We have been quite aware of this kind of information deficit which often leads to premature occupational foreclosure.

However, there are three other kinds of information which have been lacking: 1) information about self, 2) information about psycho-social aspects of work, and 3) information about the process of career decision-making. Most students have not had an opportunity through the schools to obtain accurate information about themselves, their aptitudes, interests, and values - what they value, what they can do; what their priority values are and how they want to act on those values through the choices and decisions they make. Often the information they have obtained is of the objective, logical kind about work requirements, pay, and job duties instead of what Samler has called the "psycho-social aspects" of work - the life style it affords and the psychological meaning it has in the life of an individual. Moreover, many young people do not have access to working role models through whom they can get this kind of information. Third, they need to be exposed to the process of career decision-making in today's world, to discover that it is no longer a one-shot, one-choice-for-life decision but a series of developmental decisions and roles starting in the elementary years and continuing into retirement.

6. The Special Needs of Bypassed Populations. The special needs of minorities, poor whites, and other disadvantaged populations have been given some attention through the poverty and economic opportunity programs of the late '60's. Nonetheless, many of these are "band-aid" kinds of operations which deal with remediation rather than prevention. The Civil Rights movement has greatly dramatized the needs of minority persons whose career and other needs have been shortchanged. As Feldman (1967) points out so well, the schools are responsible for preparing all individuals for full participation in the economic life, and yet for many deprived individuals, we have not equipped them with the skills, the competencies, the sense of agency, or the positive self-concepts which allow them to obtain a better job, which is a key to a better life and to rising on the socioeconomic ladder.

There is a special dilemma now in that at a time when many minority persons have gained access to a college education, the college diploma no longer appears to be the key to success. And there is some concern among Blacks that career education will attempt to train all their youngsters for vocational and technical careers. Disadvantaged students have suffered most from the school's unwillingness to accept responsibility for career preparation, from the heavily verbal academic curriculum which often has not met their needs, from the unfortunate perception of vocational education as a dumping ground for the problem student rather than a positive, viable option which can open up opportunities. The reluctance of the schools to relate curriculum to the world of work - with its roots in the old general education-vocational education controversy - has done a special disservice to those who have been outside of the opportunity structure. Career education - as one means of bringing education and work closer together in an integrated curriculum - offers some promise.

Another group whose special needs are just beginning to achieve special attention is the 51 percent called women. It has been extremely disconcerting to me that most of the literature on career education which has come out in the past two years has given only token attention, if at all, to the important question of the education and employment of women. Except for Roman Pucinski's chapter, few writers have shown any indication that there is need for concern about the career development of women as well as of men. It seems to me that the facts about women in the labor force, along with the moderate voices of the Women's Movement (of which mine is one), make explicit the need for women to be able to choose freely from a variety of roles in life and not to be forced into one mold or career pattern for all. The creation of programs of career education geared to the changing role of women will also dramatize the need for programs for the changing roles of men in work and family. The startling facts about women in employment - the increasing numbers, the limited opportunity in stereotyped occupations, the discrimination in salary and promotion - are matched by a concern about the lessened opportunities for self-fulfillment which a tight labor market presages.

Two signs that the USOE is beginning to show concern are 1) its sponsorship of a work seminar this month on Women in the Labor Force with Implications for Career Education and 2) the fact that the official USOE film on career education has been withdrawn due to the inadequate representation of women and minorities. While most of the career development research and theory has been on men, there is some evidence that attention is now being turned to career development of and career education for women.

The problem of lack of planning, lack of work orientation, and lack of identity have been especially complicated for girls whose planning typically has been for college as a stop-gap job until marriage; whose identity has been through a husband's occupation; and whose main role has been prescribed by society as that of wife and mother.

New Delivery Systems

All of these dilemmas reflect the need for some major educational changes - in general and vocational curriculum and in vocational guidance. Students have told us in a variety of ways that we are not meeting their needs in the life planning domain. Studies of early childhood have indicated that students develop their attitudes about occupations very early in life; high school students have repeatedly faulted the schools - and especially counselors - for lack of effective help in career planning; and college students are fearful and uncertain about alternatives as they face the prospect of a job market which appears to hold little for them in some traditional fields in which they find themselves overtrained and un- or underemployed.

There is no doubt that individuals in a complex society such as ours need more help in finding out who they are, where they're going, what they can become - men, women, Black, white, Chicano, Indians, all. Counselors as one of the major delivery systems have been inadequate for a variety of reasons, not all of their own creation. The curriculum, as another part of the delivery system, has also been inadequate. And now, a different kind of delivery system is being advocated - a system of career education which provides for a variety of experiences through the curriculum, in school and in community, involving teachers, counselors, parents, and business representatives. It is my belief that career education in the broad sense can be a truly liberating force for social change and a humanizing alternative for individual development. It holds potential for unifying the curriculum, better meeting individual and societal needs and for dealing with some of these social, psychological, and economic issues which face us. I would like to spend the remaining minutes delineating some of the major characteristics of a career education curriculum in this broad context.

Career Education: Liberating Alternative for a Humanized Curriculum

Thus far I have suggested that educational change and reform is one means by which democratic nations try to implement goals to which they are committed, that three historical strands in American education have converged into a thrust which today is called career education, and that some of the major social dilemmas of our nation affect and will be affected by what happens in the schools as a result of broad programs of career education.

I am very much concerned about the narrow perceptions that many educators and parents have of career education. Some see it as just another name for vocational education, and, as such, something which they are not buying into. Some see it as a put-down of general and academic education and as an attempt to vocationalize the schools. Some see it as vocational and technical training for everyone, as early tracking, and as an abandonment of the college-for-everybody American dream - a prospect of special concern to minorities who are just gaining greater access to higher education. Others see it as a promulgation of a traditional work ethic for all at a time when work values are diverse and changing and, even more, as a glorification of work without adequate attention to the importance of leisure, aesthetics, family, and community. While many of these interpretations are inaccurate, the expanded concept helps counteract these fears and concerns.

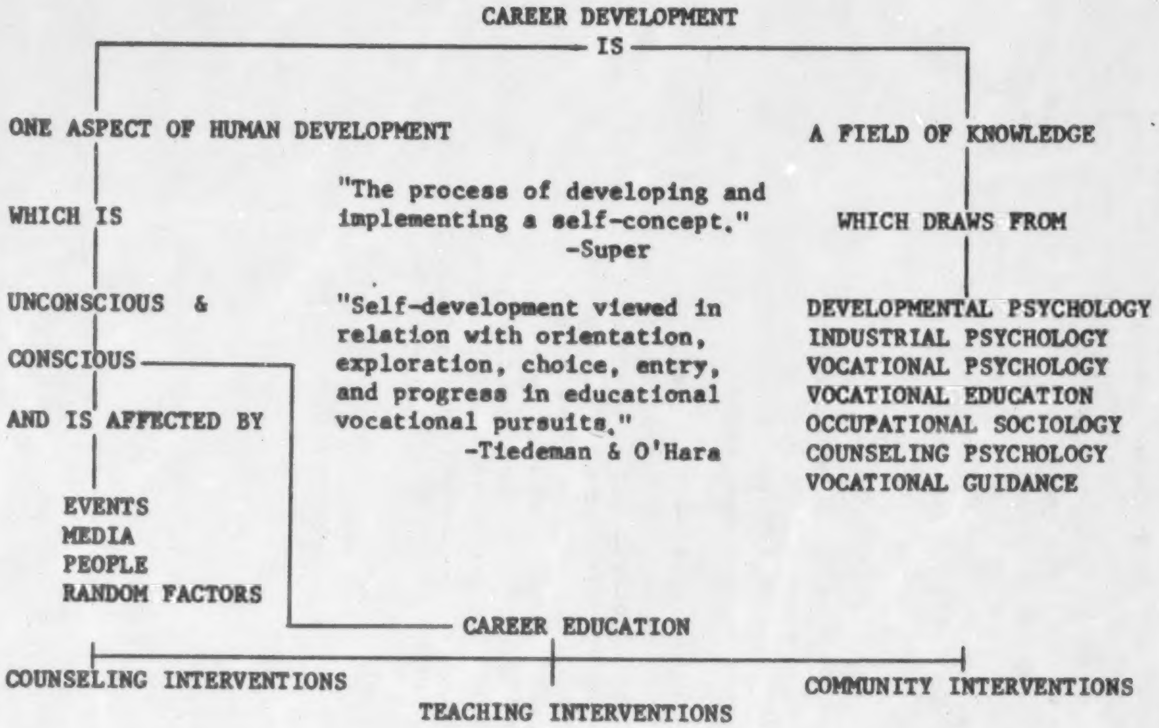
But in a more positive vein, I believe that in the broad context career education has potential to be both liberating and humanizing - liberating in the sense of opening up more opportunities, options, and freedom of choice for all segments of our society to more fully develop their potentials; humanizing in that it will put the focus back where it belongs - on the self-development of the individual and his human needs and values. I would like to briefly describe the dimensions of such a curriculum as my colleagues and I at the University of Minnesota have attempted to define it. For the last several years Wes Tennyson, Mary Klaurens and I (1972), along with a group of very capable graduate students, have been conceptualizing a K-12 career development curriculum to facilitate self-development.

The Career Development Curriculum (CDC)

In our conceptualization we have been strongly influenced by Super, by Tiedeman and O'Hara, and other career development researchers. Super's definition of vocational development as "a continuous process of developing and implementing a self-concept, with satisfaction to self and benefit to society" (1953) still holds a great deal of meaning today. Life stages - of growth, exploration, establishment, maintenance, and decline - play an important part in his theory, and it is these life stages and the developmental tasks associated with them that form the rationale for our approach. Super's view of career as embracing the major roles one occupies in a lifetime - family member, community member, student, and worker (1971) - suggests that school is part of one's career and, more important, that the job of student should be a joyful, humanizing, growth-producing experience.

Katz (1973) contributes to the broad concept when he says the basic choices of work and non-work are choices among values and value systems - that each individual makes self appraisals, evaluates past performance and predicts future performance, and his decisions and plans express his self concept.

In our work on the Career Development Curriculum (CDC), which is an attempt to translate some of the broad career development concepts into a systematic set of learning experiences, we view career development as a process, a part of human development which occurs whether we do anything about it or not. We see career education as the teaching and counseling interventions which facilitate that development. We have identified ten major dimensions that provide a broad framework for practice - and which we believe get at a number of the social dilemmas just described - and have attempted to state these in behavioral terms.



CAREER DEVELOPMENT

IS

ONE ASPECT OF HUMAN DEVELOPMENT

WHICH IS

UNCONSCIOUS &

CONSCIOUS

AND IS AFFECTED BY

EVENTS
MEDIA
PEOPLE
RANDOM FACTORS

"The process of developing and implementing a self-concept."
-Super

"Self-development viewed in relation with orientation, exploration, choice, entry, and progress in educational vocational pursuits."
-Tiedeman & O'Hara

A FIELD OF KNOWLEDGE

WHICH DRAWS FROM

DEVELOPMENTAL PSYCHOLOGY
INDUSTRIAL PSYCHOLOGY
VOCATIONAL PSYCHOLOGY
VOCATIONAL EDUCATION
OCCUPATIONAL SOCIOLOGY
COUNSELING PSYCHOLOGY
VOCATIONAL GUIDANCE

CAREER EDUCATION

COUNSELING INTERVENTIONS

TEACHING INTERVENTIONS

COMMUNITY INTERVENTIONS

Dimensions of Career Education

The student will:

Orientation and Exploration

1. Identify his interests, abilities, values, needs and other self characteristics as they relate to occupational roles,
2. Explore occupational areas and describe opportunities, potential satisfactions, required roles of workers and other related dimensions,
3. Describe the psychological meaning of work and its value in the human experience,
4. Describe modern work structure and its organizational milieu,
5. Tell how the individual's role in work is tied to the well-being of the community,
6. Demonstrate planfulness in striving to achieve occupational goals and objectives,
7. Demonstrate through his work relevant behavior that he is acquiring a concept of self as a productive person in a work-centered society,

Training and Advancement

8. Describe that relationship which exists between basic skills, marketable skills, and interpersonal skills and the jobs he can reasonably aspire to in adult life,
9. Demonstrate possession of a reasonable degree of basic skills, knowledges and behavioral characteristics associated with work of some type or an occupational area,
10. Demonstrate through his work relevant behavior an ability to learn, adjust to, and advance in his chosen occupation.

These dimensions clearly support our view that career development and personal or self development are part of the same package, a position which emerged out of an awareness that students are not fulfilling their potentialities partly because we have failed to help them work out the relationships between themselves and their society. This awareness has been reinforced by their cries for a more *humane* environment, for a more *relevant* curriculum. And relevance is found. . . "when that which is being learned enables one to understand the meaning of his life and when experiences are provided which help tie together community and individual interests" (Tennyson, 1971).

The CDC reflects our belief that work and leisure offer a natural vehicle for self-exploration and self examination - not strictly an egocentric search for self but a socio-centric search for self in society. We have developed a set of objectives and learning experiences which provide students with opportunities for value clarification with respect to work and for reality-testing of their emerging values and self concepts.

Drawing from the work of Piaget, Havighurst, and others, we have refined a set of sequential developmental tasks framed in behavioral terms and have translated these into performance and enabling objectives. Let me briefly share with you these tasks, as we see them.

VOCATIONAL DEVELOPMENT TASKS OF THE PRIMARY YEARS

1. Awareness of self
2. Acquiring a sense of agency
3. Identification with workers
4. Acquiring knowledge about workers
5. Acquiring interpersonal skills
6. Ability to present oneself objectively
7. Acquiring respect for other people and the work they do

VOCATIONAL DEVELOPMENT TASKS OF THE INTERMEDIATE YEARS

1. Developing a positive self concept
2. Acquiring the discipline of work
3. Identification with the concept of work as a valued institution
4. Increasing knowledge about workers
5. Increasing interpersonal skills
6. Increasing ability to present oneself objectively
7. Valuing human dignity

VOCATIONAL DEVELOPMENT TASKS OF THE JUNIOR HIGH YEARS

1. Clarification of a self concept
2. Assumption of responsibility for vocational planning
3. Formulation of tentative career goals
4. Acquiring knowledge of occupations and work settings
5. Acquiring knowledge of educational and vocational resources

6. Awareness of the decision-making process
7. Acquiring a sense of independence

VOCATIONAL DEVELOPMENT TASKS OF THE SENIOR HIGH YEARS

1. Reality testing of a self concept
2. Awareness of preferred life style
3. Reformulation of tentative career goals
4. Increasing knowledge of and experience in occupations and work settings
5. Acquiring knowledge of educational and vocational paths
6. Clarification of the decision-making process as related to self
7. Commitment with tentativeness within a changing world

In addition, we have created learning packages which facilitate these tasks at each level - packages which represent the broad context of career education in such titles as "Life Styles and Work," "Self-Concept Exploration," "Women and the World of Work," "Occupational Satisfactions and Rewards," "Value Identification," and "The Social Contribution of Work." It is intended that these experiences, designed to promote vocational maturity, might be incorporated at different levels and in diverse subjects so that by the time a student completes high school, he will have had a systematic set of career exploration experiences - tied to developmental tasks but not rigidly prescribed - experiences which will help him to clarify his goals, to obtain the skills, knowledge and attitudes to achieve them, to learn who he is, what he values, and how he defines himself in relation to others and to society. Our comprehensive career education program has eight basic criteria:

1. It is designed to meet the needs of all students, K-12.
2. It is sequential, building on vocational development tasks at each level.
3. It is implemented throughout the curriculum.
4. It includes behavioral objectives and learning experiences for all of the dimensions.
5. It exposes students to the full spectrum of the world of work.
6. It provides for directed occupational experiences in the real world of work, along with simulated and informational experiences to permit focus on career clusters.
7. It identifies leadership and provides for coordination of teacher efforts.
8. It provides in-service education to orient teachers to career development and the business and industrial world.

This kind of approach suggests a quite different view of career development or vocational guidance than merely helping students obtain occupational information or choose a job or college. Career education becomes not only a vehicle for unifying curriculum around student needs but with potential for humanizing the school through providing the student with greater opportunity to experience who he is as a person and to change the school in ways that facilitate his development into a vocationally mature human being aware of and prepared to do something about the major social issues facing our nation (Hansen, 1972).

The career education curriculum becomes a vehicle for preventive education, acknowledging that a primary task of the school is development of positive self concepts, helping students obtain control over their own lives, and maximizing their vocational possibilities. It offers a curriculum which helps each individual examine the meaning he wants work to have in his life and the life style he envisions - the needs he has for leisure, self-esteem, community involvement, for family relationships, for security, for adventure, for status, for power, for self-fulfillment - in other words, a school system which asks not "Where do Johnny and Janie best fit?" but rather: "How do work and leisure fit into the kind of life Johnny and Janie want and the kinds of persons they perceive themselves to be?" Not "How can they be shaped to work, but how can work be shaped to individuals?" Not just fitting into jobs which exist but helping create jobs which fulfill their personal needs and also contribute to the world's unfinished work: the improvement of society, the resolution of contemporary social issues, and raising the quality of life for all. This, to me, is the liberating and humanizing potential of career education.

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THE CAREER DEVELOPMENT PROGRAM

by
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SPECIFICATION OF BEHAVIORS WHICH CHARACTERIZE EACH VOCATIONAL DEVELOPMENT TASK

Primary Level Grades K-3

DT#P1 AWARENESS OF SELF

- PO#1 Describes how he perceives himself as different from those around him.
    - EO#1 Identifies characteristics which describes his physical appearance.
    - EO#2 Identifies characteristics which describe him mentally and emotionally.

- PO#2 Describes how his health may affect his work performance or be affected by it.
    - EO#1 Identifies ways in which poor physical or mental health may affect his work performance now and in the future.
    - EO#2 Lists ways in which an occupation can affect his physical and mental health, positively and negatively.

- PO#3 Demonstrates success in coping with new social and work roles.
    - EO#1 Identifies social and work roles which are new for him.
    - EO#2 Describes how he is fulfilling a new work role.
    - EO#3 Demonstrates adequate performance in a new social role.

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DT#P2 ACQUIRING A SENSE OF AGENCY

PO#1 Defines work and demonstrates that he is a responsible worker.
- EO#1 Constructs an oral or pictoral definition of work.
- EO#2 Lists work tasks he fulfills regularly and identifies reasons why he fulfills them.
- EO#3 Describes how his role as a student is like that of an adult worker.

PO#2 Describes how work can be a principal instrument for coping with and changing his own environment.
- EO#1 Identifies ways in which work he does at home affects his physical, social and emotional environment.
- EO#2 Describes how work he does in school can affect him socially and economically, now and in the future.
- EO#3 Identifies things he can do to make his environment more as he would like it to be.

PO#3 Identifies manipulative abilities that have relevance for work.
- EO#1 Demonstrates manipulative abilities in a variety of tasks.
- EO#2 Lists abilities he is in the process of acquiring.
- EO#3 Names occupations in which he could use his manipulative abilities.

PO#4 Describes his own behavior in a work situation in terms of why he does or does not do more than the minimum required.
- EO#1 Identifies the requirements of a given work situation.
- EO#2 Lists reasons for and against doing more than the minimum in work situations.
- EO#3 Identifies reasons why he behaves as he does in any given work situation.

DT#P3 IDENTIFICATION WITH A WORKER

PO#1 Identifies ways in which he is like workers he knows.
- EO#1 Lists tasks he performs which are similar to those performed by workers he knows.
- EO#2 Names at least one characteristic which he shares with a worker.

PO#2 Describes self and the kind of person he wishes to become in light of his observations of worker models.
- EO#1 Lists characteristics of a worker model that he would like to acquire.

EO#2 Identifies worker characteristics which he would like to acquire and describes how he might acquire them.

PO#3 Demonstrates an awareness that the effectiveness of workers he knows is closely related to the personal impression they make.
EO#1 Identifies those students in his class who are effective workers and describes the general impression they make.
EO#2 Identifies workers in his neighborhood who make either positive or negative impressions and describes their work effectiveness.

DT#P4 ACQUIRING KNOWLEDGE ABOUT WORKERS

PO#1 Describes the work of significant persons in his life.
EO#1 Names the occupations held by his parents, close relative, neighbors, and others who are important to him.
EO#2 Identifies tasks which make up the occupation of several significant others.

PO#2 Observes and talks to various workers in the school and neighborhood to gain occupational awareness.
EO#1 Lists the occupations represented in his school and identifies tasks performed in each.
EO#2 Observes workers in his neighborhood and describes the tasks they perform.

PO#3 Increases the range of workers about whom he has knowledge.
EO#1 Identifies workers who provide services to his home and describes their functions.
EO#2 Names occupations whose function he doesn't know and interviews workers in those fields.

PO#4 Asks significant others what skills they need in their jobs.
EO#1 Lists skills which correspond with the occupations of significant others.

DT#P5 ACQUIRING INTERPERSONAL SKILLS

PO#1 Performs in a given work situation in a manner which indicates he understands that work effectiveness depends not just on proficiency but on quality of interpersonal relations as well.
EO#1 Demonstrates in a group task that completion of the task depends on cooperation as well as individual proficiency.
EO#2 Describes the effect of pleasant or unpleasant relationships on his ability to work effectively.

- PO#2 Contributes positively to group effort in a work situation by demonstrating ability to both compromise and exercise influence in the achievement of group goals.
  - EO#1 Lists group goals in a given situation and identifies reasons why he may have to compromise to reach those goals.
  - EO#2 Describes how his influence might help to achieve group goals.
  - EO#3 Identifies advantages and disadvantages of compromise and influence in a given situation.

- PO#3 Describes how participation in individual and group activities will aid his development or enhance a work-related skill.
  - EO#1 Describes how working with others can help him develop a work-related skill.
  - EO#2 Identifies similarities in his relations with other students and an adult worker's relations with co-workers.

DT#P6 OBJECTIFICATION OF SELF BEFORE OTHERS

- PO#1 Demonstrates ability to use constructively success or failure in a work situation.
  - EO#1 Identifies factors which contribute to success or failure in a work situation.
  - EO#2 Describes his performance in a given situation as successful or unsuccessful and asks for constructive criticism.
  - EO#3 Describes knowledge gained in failure to complete a task which might not otherwise be gained.

- PO#2 Demonstrates the ability to depend upon others and to be depended upon in the work environment.
  - EO#1 Identifies ways in which he is dependent upon the work of others.
  - EO#2 Identifies ways in which others depend on work he does.
  - EO#3 Describes the advantages and disadvantages of depending on others and being depended upon.

- PO#3 Shows a genuine concern for his fellow workers and expresses a shared responsibility for success or failure of the work group.
  - EO#1 Describes how the performance of any member of a work group can affect the group's performance.
  - EO#2 Identifies the effects of his actions on other workers and describes his responsibilities to them because of these effects.

DT#P7 ACQUIRING RESPECT FOR OTHER PEOPLE AND THE WORK THEY DO

- PO#1 Describes the contribution of any different workers to society.
  - EO#1 Lists the contribution of workers at various socio-economic levels and identifies reasons why each is important.
  - EO#2 Describes the interdependence of the people in his school and neighborhood: how each of them needs the others.

- PO#2 Describes how the work of women is as important as that of men.
  - EO#1 Identifies the contribution women make to his life.
  - EO#2 Describes the changing role of women in the world of work.

Intermediate Level - Grades 4-6

DT#11 DEVELOPING A POSITIVE SELF CONCEPT

- PO#1 Describes how he and others perceive his strengths.
  - EO#1 Identifies positive characteristics which describe him.
  - EO#2 Describes positive characteristics which others see in him.
  - EO#3 Identifies the characteristics he and others agree he possesses and those on which they do not agree and lists possible reasons for their disagreement.

- PO#2 Describes how he perceives himself in terms of interests, abilities, values and goals.
  - EO#1 Classifies a list of terms as interests, abilities, values and goals.
  - EO#2 Selects from a list his own interests abilities, values and goals.

- PO#3 Identifies his own values as they relate to work situations.
  - EO#1 States how, if at all, his behavior would differ from that of a worker model in a value conflict situation.
  - EO#2 Identifies values he holds and lists occupations through which these values are promoted.
  - EO#3 Identifies occupations in which it would be difficult to maintain the values he now holds.

PO#4 Describes work as valuable in terms of its intrinsic satisfactions.
- EO#1 Identifies satisfactions in his work as a student.
- EO#2 Lists abilities which he enjoys using and identifies occupations in which he could use those abilities.
- EO#3 Identifies satisfactions relating to interests and values which he can gain through work.

PO#5 Describes ways in which he can express himself through his work.
- EO#1 Identifies personal characteristics which he values and describes his use of those characteristics in school.
- EO#2 Lists occupations through which he could express his interests, values and abilities.

DT#12 ACQUIRING THE DISCIPLINE OF WORK

PO#1 Demonstrates effective work habits by utilizing communication skills when giving or evaluating instructions.
- EO#1 Instructs another student or group of students in the performance of a simple task.
- EO#2 Follows instructions to perform a simple task.
- EO#3 Asks questions which make completion of a task possible.

PO#2 Identifies those factors taken into consideration by an employer when choosing from an abundance of job applicants.
- EO#1 Identifies characteristics which an employer would consider at a job interview.
- EO#2 Identifies qualifications an employer would consider important.

PO#3 Budgets his time effectively by managing his leisure, work and home time in ways that enable him to achieve individual goals.
- EO#1 Identifies an individual goal and constructs a schedule of leisure, work and home time which will enable him to meet that goal.
- EO#2 Identifies individual goals which may conflict in terms of the time they consume and describes alternative schedules which allow him various ways of resolving the conflict.

PO#4 Demonstrates a personal involvement in the work task and situation, responding positively to problems.

- EO#1 Selects a work task, identifies the problems involved in it and describes means of coping with the problems.
- EO#2 In a given task selects a positive means of solving a problem.

DT#13 IDENTIFICATION WITH THE CONCEPT OF WORK AS A VALUED INSTITUTION

PO#1 Explains how the things he learns in work make his leisure time more enjoyable.

- EO#1 Describes how work and leisure time pursuits are related.
- EO#2 Identifies skills he uses in school which make his leisure time enjoyable.
- EO#3 Lists work attitudes and interests which extend appropriately to leisure time.

PO#2 Identifies and explores two or more broad occupational areas which may offer satisfying work activity.

- EO#1 Describes the satisfactions significant others gain from their occupation.
- EO#2 Identifies the contribution of occupational areas to society.

PO#3 Describes how his interests relate to broad occupational areas.

- EO#1 Identifies work oriented interests in the home, school and community.
- EO#2 Identifies occupational areas which relate to home, school and community work-oriented interests.

PO#4 Identifies the value he places on personal endeavor and achievement as compared to societal values.

- EO#1 Identifies personal values placed on work and achievement.
- EO#2 Identifies home and societal values placed on work and achievement.
- EO#3 Describes the differences between the real and ideal in our work value system.
- EO#4 Identifies how and why personal values change as a result of societal values.

DT#14 INCREASING KNOWLEDGE ABOUT WORKERS

PO#1 Identifies and utilizes non-technical resources available for gathering information about occupations.
  - EO#1 Describes human resources available to him in the school and community.
  - EO#2 Constructs a sample interview questionnaire for gaining occupational information.
  - EO#3 Lists resources available to him in the library, classroom and home.

PO#2 Studies workers in various occupations to learn their satisfactions and dissatisfactions.
  - EO#1 Interviews workers in various occupations to learn their satisfactions and dissatisfactions.
  - EO#2 Interviews workers in the same occupations and describes similarities and differences in their satisfactions, interests, attitudes and skills.

PO#3 Identifies the sources of power and authority in work situations and describes their effect on the worker.
  - EO#1 Identifies a source of power and authority in the classroom and describes its effect on him.
  - EO#2 Identifies several sources of power and authority in work tasks.
  - EO#3 Describes a situation in which he is a source of power and authority and describes his effect on others.

PO#4 Identifies the reasons why many women will need the stimulation and rewards of a work role in addition to a family role.

DT#15 INCREASING INTERPERSONAL SKILLS

PO#1 Identifies personal characteristics in his relations with other people as they are relevant to work (e.g., persuading, cooperating, etc.).
  - EO#1 Describes his mental, physical and emotional characteristics which are apparent in work situations.
  - EO#2 Identifies characteristics in his relations with others which seem to facilitate working with them.
  - EO#3 Lists characteristics which seem to hinder his interpersonal relations and describes how he might change them.

PO#2 Describes how a person's welfare is dependent upon the well being of all people in society.
- EO#1 Identifies factors in personal well being.
- EO#2 Identifies factors of societal well being, including wages earned in work.
- EO#3 Describes the effect of local and national economy on individual well being.

PO#3 Identifies social, political and service organizations available to him and describes how he can contribute to the community and school through them.
- EO#1 Lists the local service clubs and describes their contribution to the community.
- EO#2 Identifies the political organizations in the community and describes how their policies and actions affect occupations.
- EO#3 Describes the pressures to join organizations because of work affiliations.

PO#4 Displays an awareness of the dynamics of group behavior by successfully functioning as a contributing member of a task oriented group.
- EO#1 Identifies ways in which his individual experiences will benefit the work group.
- EO#2 Demonstrates in group interaction the ability to facilitate task performance through teamwork.

DT#16 INCREASING OBJECTIFICATION OF SELF BEFORE OTHERS

PO#1 Copes with authority exercised by others in the work environment in ways which lead to effective achievement of the task.
- EO#1 Locates and identifies authority in his environment.
- EO#2 Describes how an authority can facilitate completion of his own task.
- EO#3 Lists ways in which he can complete his tasks with the help of or in spite of authority exercised by others.

PO#2 Elicits and considers suggestions and evaluations regarding a given work performance.
- EO#1 Selects and performs a task, asking the teacher for suggestions.
- EO#2 Describes his performance of a work task to his peers; identifies and utilizes constructive suggestions.

PO#3 Describes his obligation as an interdependent person in a work oriented community.
- EO#1 Selects an occupation and describes what would happen to society if that occupation's functions were not performed.
- EO#2 Describes how he and his family are interdependent.
- EO#3 Identifies situations in which his failure to perform makes it impossible for others to fulfill their tasks.

DT#17 VALUING HUMAN DIGNITY

PO#1 Describes how he can contribute to society now.
- EO#1 Identifies a variety of ways in which individuals can contribute to the community.
- EO#2 Identifies social and economic needs of his own community.
- EO#3 Lists ways in which he can contribute towards fulfilling the needs of his community.

PO#2 Describes the social worth of work by identifying the contribution of a wide range of various occupations to the well being of society.
- EO#1 Lists workers who directly affect his life every day.
- EO#2 Identifies reasons why some occupations disappear while others are created.
- EO#3 Constructs a definition of the concept "dignity in all work."

PO#3 Describes how work in America can help to overcome the social problems which confront mankind today.
- EO#1 Identifies social problems that are present in society today.
- EO#2 Describes how work has helped to overcome social problems in the past.
- EO#3 Identifies occupations which aggravate and which help resolve social problems.
- EO#4 Describes what he does or can do through his occupation as a student to aggravate or alleviate social problems.

Junior High Level

DT#J1 CLARIFICATION OF A SELF CONCEPT

- PO#1 Describes the relevance of his aptitudes and abilities for broad occupational areas.
  - EO#1 Identifies his abilities and lists occupations in which they could be utilized.
  - EO#2 Selects broad occupational areas and identifies abilities required in each area.
  - EO#3 Describes how several of his abilities could be utilized in an occupation.
  - EO#4 Describes how he could develop his aptitudes for use in several occupations.

- PO#2 Describes his own values as they relate to occupations, work situations and personal work behavior.
  - EO#1 Lists values which are congruent and incongruent with his preferred occupations.
  - EO#2 Describes how his social roles are influenced by the work he does and how well he does it.
  - EO#3 Identifies his personal values by participating in activities which make him aware of himself.

- PO#3 Demonstrates sensitivity to the needs of co-workers and supervisors and describes how he is a significant person in the satisfaction of these needs.
  - EO#1 Describes ways in which his behavior at school and at home affects his immediate family.
  - EO#2 Identifies requirements of students and teachers in several situations and describes how he meets those requirements.
  - EO#3 Identifies ways in which his behavior in a preferred occupation could help his co-workers and supervisors, and ways in which it could hinder them.

- PO#4 Predicts and gives supporting evidence for the likelihood of his achieving his occupational goals.
  - EO#1 Describes physical, mental, social and financial requirements for reaching his occupational goals.
  - EO#2 Identifies self-characteristics which may help or hinder achievement of his occupational goals.

DT#J2 ASSUMPTION OF RESPONSIBILITY FOR VOCATIONAL PLANNING

- PO#1 Describes how his management of personal resources (talents, time, money) affects his way of life and achievement of life goals.

EO#1 Identifies his actual and potential personal resources.

EO#2 Describes his present life goals and relates his personal resources to these goals.

EO#3 Identifies several different ways of managing his personal resources which may lead to achievement of his life goals.

PO#2 Demonstrates a commitment to the idea that he should have a plan for his educational-vocational life.

EO#1 Identifies various sources of educational-vocational information and describes their relevance for his life.

EO#2 Formulates a tentative plan for his educational-vocational life based upon sound information and selective use of resources.

PO#3 Plans his current school experience so that it fits into the pursuit of his occupational goals.

EO#1 Identifies academic courses whose completion may aid in the achievement of his occupational goals.

EO#2 Describes how his behavior in both academic and non-academic aspects of his school experience can affect achievement of his occupational goals.

DT#J3 FORMULATION OF CAREER HYPOTHESES

PO#1 Identifies personal needs and sources of satisfaction which he should consider in planning his career.

EO#1 Describes the relevance of his interests for broad occupational areas.

EO#2 Identifies those factors which will be significant for himself in the selection of a career.

PO#2 Formulates a tentative educational and training plan to prepare himself for a given occupational field or preferred vocation.

EO#1 Identifies an occupational field or preferred vocation and delineates steps necessary for entrance to that field or vocation.

EO#2 Identifies and seeks information about alternative occupations for which training, experience and interest requirements are sufficiently similar to those of preferred occupations that they may serve as alternative career possibilities.

DT#J4 ACQUIRING KNOWLEDGE OF OCCUPATIONS AND WORK SETTINGS

PO#1 Increases the range of occupations of which he has knowledge and examines their functions and requirements.
  - EO#1 Makes occupational observations in various work settings as an essential part of his introduction and exploration into the work culture.
  - EO#2 Identifies the multiplicity of interests that may be satisfied in two or more broad occupational areas.

PO#2 Gathers information concerning the factors necessary for success on a job.
  - EO#1 Debates the benefits of conforming behavior as opposed to individual initiative within the work organization.
  - EO#2 Identifies various sources of information on job success and describes how he can utilize them.
  - EO#3 Identifies social, political, economic and educational factors which may affect success in his preferred occupations.

PO#3 Describes those factors beyond his control which operate within the modern work world to stimulate or retard vocational opportunities.
  - EO#1 Identifies events of international significance which affect vocational opportunities (wars, Sputnik, depressions).
  - EO#2 Describes the extent to which business and unions operate either on the basis of private interest or social responsibility.

DT#J5 ACQUIRING KNOWLEDGE OF EDUCATIONAL AND VOCATIONAL RESOURCES

PO#1 Identifies and utilizes those resources available for gathering information about occupational characteristics.
  - EO#1 Describes resources available to him within the school for occupational information.
  - EO#2 Lists community resources for occupational information and describes how he can utilize them.

PO#2 Identifies and utilizes appropriate criteria for evaluating occupational information.
  - EO#1 Describes occupational resources available to him in terms of their accuracy, recency and completeness.
  - EO#2 Identifies factors which may contribute to misinformation about occupations (occupational

stereotypes, societal status rankings, incomplete research, outdated facts).

DT#J6 AWARENESS OF THE DECISION-MAKING PROCESS

PO#1 Describes his current life context as it relates to his vocational decisions.
- EO#1 Constructs a definition of a value and describes the valuing process.
- EO#2 Identifies personal values, personal and family aspirations and family background factors which may influence his vocational decisions.
- EO#3 Identifies the vocational and educational options available to him and describes their feasibility.
- EO#4 Projects those factors which may inhibit or deter his educational or vocational progress.

PO#2 Describes how the expectations of others affect his career plans.
- EO#1 Identifies significant others in his life and lists expectations they have of him.
- EO#2 Describes how his present behavior is affected by the expectations of others.
- EO#3 Identifies ways in which his career behavior affects the lives of those around him (parents, spouse, etc.).

PO#3 Projects decisions he will face in the future and describes means of facing them.
- EO#1 Identifies decisions he must make prior to entering an occupation and lists options available to him.
- EO#2 Identifies several ethical questions which confront workers in his preferred occupation(s) and describes the ways in which these people have formed acceptable solutions.

DT#J7 ACQUIRING A SENSE OF INDEPENDENCE

PO#1 Identifies those characteristics which make him a unique individual.
- EO#1 Describes his physical, mental and social abilities and aptitudes.
- EO#2 Identifies a wide range of social organizations and describes his own potential as a contributing member of each.

PO#2 Selects from the advice given by significant others that which he can utilize in planning his career.

- EO#1 Identifies factors which affect the advice given by others (their own needs, misinformation).
- EO#2 Describes similarities and differences between his needs and abilities and the needs and abilities of those giving him advice.

PO#3 Demonstrates an ability to evaluate and cope with varying expectations so that he may satisfactorily perform in a given work situation.

- EO#1 Describes the motivations of supervisors and co-workers in the work environment who may hold varying expectations regarding his present work performance.
- EO#2 Ranks varying expectations according to their importance in successful completion of the work task and according to their importance in making the work situation a pleasant one.

Senior High Level

DT#S1 REALITY TESTING OF A SELF CONCEPT

PO#1 Describes his own abilities, aptitudes, and other personal resources in relation to the requirements for preferred occupations.

- EO#1 Identifies both actual and potential personal resources.
- EO#2 Describes the physical, mental, social, economic and educational requirements of his preferred occupations.

PO#2 Describes the social roles and social demands he must fulfill for successful performance in his preferred occupation(s).

- EO#1 Identifies the value he places on personal endeavor and achievement compared to societal values.
- EO#2 Describes the roles of various workers in his preferred occupation(s) noting the similarities and differences in how they perform and how successful they are.

PO#3 Demonstrates success in coping with new social and work roles.

- EO#1 Copes with authority exercised by others in ways which lead to effective realization of his own personal goals.
- EO#2 Handles his own position of authority in the work environment in ways which lead to effective realization of personal goals and development of others.

DT#S2 AWARENESS OF PREFERRED LIFE STYLES

PO#1 Makes explicit his life style needs and priorities at this point in time.
- EO#1 Describes how self characteristics relate to the responsibilities and tasks of his preferred occupation(s).
- EO#2 Identifies life style needs which may be in conflict with the demands of his preferred occupation(s) and assigns them a priority ranking.

PO#2 Describes the ways in which his career choice may affect his future life style.
- EO#1 Describes life styles and ways of living associated with a few occupations in the broad occupational area or areas of his choice.
- EO#2 Describes how different occupations and work settings vary in the degree of personal freedom to define one's role and activities.
- EO#3 Explains how a vocation may contribute to a balanced and productive life.

DT#S3 REFORMULATION OF CAREER HYPOTHESES

PO#1 Studies and projects a career plan that will enable him to pursue an occupation which will fulfill the personal needs and values he considers most important.
- EO#1 Describes how the image he holds of his preferred occupation relates to information he receives through occupational literature and real contacts with workers.
- EO#2 Seeks information about the way his preferred occupation(s) may affect his life style.

PO#2 Describes how his preferred occupation can be a source of satisfaction and human expression of self.
- EO#1 Describes the ways in which his preferred work contributes to the welfare of society.
- EO#2 Identifies personal qualities which can be developed and expressed through his work.

DT#S4 INCREASING KNOWLEDGE OF AND EXPERIENCE IN WORK SETTINGS AND OCCUPATIONS

PO#1 Describes the interdependency of all workers and work talents in contributing to the well-being of the community.

EO#1 Describes the roles required of workers in various occupations and assesses the compromises involved in performing these roles.

EO#2 Investigates and discusses the ways in which management, labor and government interact to influence work life.

EO#3 Demonstrates the ability to depend on others and to be depended upon in the work environment.

PO#2 Describes work as a principal instrument for coping with and changing his own environment.

EO#1 Describes changes within the modern work society which have affected the traditional division of labor by sex.

EO#2 Describes how he can work for social change within his preferred occupation(s).

EO#3 Identifies outcomes of his work which assist him in coping with his environment.

PO#3 Selects potential employers and locates suitable job opportunities.

EO#1 Describes the roles required of workers in his preferred occupations and identifies compromises he would have to make to fulfill those roles.

EO#2 Elicits information about what persons with experience and training in his preferred occupations are receiving as compensation.

DT#S5 ACQUIRING KNOWLEDGE OF EDUCATIONAL AND VOCATIONAL PATHS

PO#1 Describes the quality of education, job training, or work experience necessary in preparation for a preferred occupation.

EO#1 Seeks information concerning the content and requirements of educational and training courses that may facilitate occupational goals.

EO#2 Identifies sources of financial aid for further education or training and the requirements or restrictions of specific assistance.

EO#3 Interprets census and occupational outlook data and draws conclusions about employment trends in various occupations.

EO#4 Identifies the various job ladder or career progression possibilities of a few jobs in several broad occupational areas.

PO#2 Seeks information about what skills are needed to get a job.

EO#1 Identifies skills necessary for success in preferred occupation(s).
EO#2 Identifies and practices appropriate behavior for an employment interview.
EO#3 Identifies information that should be included in a resume and/or application form.

DT#S6 CLARIFICATION OF THE DECISION-MAKING PROCESS AS RELATED TO SELF

PO#1 Projects and describes the factors which may influence his career decisions.
  EO#1 Compares immediate rewards with long term rewards in several occupations.
  EO#2 Describes potential economic opportunities in relation to personal satisfactions in considering different occupations.

PO#2 Accepts responsibility for making occupational choices and moving towards occupational goals.
  EO#1 Predicts the effect his career decisions may have upon significant others.
  EO#2 Identifies the personal compromises he may have to make in order to attain his preferred occupational goals.

DT#S7 COMMITMENT WITH TENTATIVENESS WITHIN A CHANGING WORLD

PO#1 Identifies the changing meanings of work over time and between cultures.
  EO#1 Examines social and economic trends for their potential effect upon broad occupational fields and upon opportunities within preferred occupations.
  EO#2 Describes how a person's career may be a means to effect social change.

PO#2 Makes career plans which take into account the fact that technology and automation influence change and may create the need for transferable skills.
  EO#1 Describes the extent to which technological change may affect the employment opportunities and role requirements of preferred occupation(s).
  EO#2 Identifies skills or knowledge utilized in the preferred occupation(s) which may transfer to another occupation.

VALUE BASES FOR CURRICULUM DECISIONS

by
Jack Conrad Willers*

The Western mind typically conceptualizes in dualistic terms, the antithesis of "internal" or "subjective" and "external" or "objective" being one representative instance. Curriculum designs and learning directions are often thought of as beginning at either of these points and proceeding toward the other. In general, the whole history of American and even European educational ideas may be interpreted as a series of emphases and over-emphases on either the sociological dimension of informing from without or the psychological process of unfolding from within. For instance, John Locke, positing the mind as a tabula rasa, a blank tablet, advocated the empirical approach to learning based on the axiom, "nothing in the mind that is not first in the senses." Curricular developments based on this or some similar philosophy face the problem of adding knowledge to the mind through experience, the task of putting something into the student's cognitive make-up which was not previously there.

To cite a contrasting example, Jean Jacques Rousseau (who, incidentally is, along with Locke, also recognized as a father of our American revolutionary experience) began with the philosophical premise that man, "the noble savage," begins with an inately good nature which education must preserve by preventing contamination of the natural through external social inputs. Thus, education takes the psychological direction of unfolding the good already within rather than making some provision to correct an existing ill or inadequacy. A curriculum based on such intellectual foundations takes on the characteristics of what has been called permissivism in distinction from the disciplinarian approach of the Lockean, or sociological, directive from the outside in.

SELF AND SOCIETY

The initial points of departure for curricular design may then be said to be either the individual learner, with his unique psychological needs and interests, or the society, its requirements, expectations, opportunities, rewards and punishments.

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When one considers the value bases for curriculum decisions inherent in the political, economic and social mileau, it may appear that the sociological direction of learning is being advocated apart from the psychological dimensions of individual experience. But one of the tasks of this discussion will be to test the validity of the subjective/objective dichotomy, and to question the antithesis of permissive naturalism and social discipline, of self and society. It just may be possible, at least from one set of philosophical assumptions, to start with the interests and expectations reflected in our socio-cultural values, yet to end with primary curricular considerations given to individual feelings and aspirations.

As we look for social curricular directions from the socioeconomic environment, emphasis might be placed on the teacher and his or her knowledge and interests, existing material resources, the cultural heritage, contemporary community styles, the economic opportunities of the job market, or manpower needs of business and industry. Vocational education has usually been keen on describing jobs, analyzing skills and identifying manpower requirements as sociological bases for curriculum development, and, of course, rightly so. But some discussion of the social value bases for curricular decisions will hopefully indicate that job descriptions and skill analyses are, in themselves, inadequate foundations for curriculum development.

After all, jobs and skills of whatever description or mode are never performed in a social vacuum, and their uses derive meaning to some significant degree in terms of the values and goals of the social context. Furthermore, there is no neutral ground on which the curriculum developer, teacher, or student can stand apart from value considerations and social issues. We all make our every educational decision in terms of some value orientation or general philosophical perspective toward life and its meaning -- no matter how confused, inconsistent or incomplete it may be. Therefore, a discussion of the value bases of curriculum appears to have some significant and worthwhile contribution to make to the development of curriculum personnel.

THE DON'TS ARE DYING

George C. Scott, playing the role of a twenty-year career policeman in "The New Centurians," expressed one of the grave social concerns of our times: "The don'ts are dying."

Only a few months ago, most of a whole youth generation, avoiding lucrative establishment positions with Dow Chemical and other members of the military-industrial complex, were convinced that "freedom is having nothing left to lose."

Ever-spiraling inflation accompanied by a tightening economy and decreased opportunities in the job market, have brought back the realization, however, that one can indeed lose even that which one does not have -- yet -- knowledge, skill, a job, dependable income, an evolving career, the promise of a life both self-satisfying and socially productive.

So the libraries are filling up again, one hears the subtle sounds of books -- not heads -- cracking, and Johnny and Susie from kindergarten to Cambridge are settling back down to the erstwhile business of competing vigorously, if not honestly, for what they are once again being convinced will be a limited number of establishment positions offering economic security, social prestige, and institutional position, if not political integrity.

CRACKED CONSENSUS

What exasperates anyone concerned with the value bases for curricular decisions -- or with more general philosophical issues and economic-political problems -- is the fact that for those for whom the don'ts are not dying, the do's are. Last year's freedoms become this year's hang-ups. Abbie Hoffman cuts his hair, while Billy Graham's barber goes broke. What once was self-restraining expression of "depression psychology" is not the latest truth in environmental education. Fads of liscense and liscentiousness quickly take on the undeniable characteristics of *rigor mortis*, and whether we run back to Robert Hutchins' *Great Books* and the discipling subject-matter of the Essentialists or to some "nostalgia what ain't what it used to be" seems to matter little or not at all. For like the Hula Hoop and the Great Society, it won't last long either; whether a do or a don't -- both die equally well.

Alvin Toffler in *Future Shock* uses the phrase "cracked concensus" in referring to this social phenomenon.

> "Value turnover is now faster than ever before in history. While in the past a man growing up in a society could expect that its public value system would remain largely unchanged in his lifetime, no such assumption is warrented today, except perhaps in the most isolated of pretechnological communities.
>
> "This implies temporariness in the structure of both public and personal value systems and it suggests that *whatever* the content of values that arise to replace those of the industrial age, they will be shorter-lived, more ephemeral than the values

> of the past . . . . For the foreseeable future, we must anticipate still more rapid value change.

Toffler continues:

> "Within this context, however, a second powerful trend is unfolding. For the fragmentation of societies brings with it a diversification of values. We are witnessing the crack-up of consensus."[1]

Schools, text books, speakers at graduation exercises and institutes for curriculum personnel development, churches' peer groups, a myriad of subcults and mass media all assert varying and conflicting values. We have become, says Newsweek, "a society that has lost its consensus -- a society that cannot agree on standards of conduct, language, and manners, on what can be seen and heard."

Peter Druker speaks of our time as "the age of discontinuity," and twenty years ago William Stanley wrote in Education and Social Integration that:

> ". . . a flock of divergent proposals and . . . a multitude of claims and counter claims . . . have exposed deep cleavages of opinion, in the public and in the (educational) profession, respecting both the basic moral and intellectual principles which should underlie educational order and the social ends which that order should serve. It is, of course, precisely this failure to achieve substantial consensus that has prevented significant educational reform."[2]

The loss of social consensus -- or a clear perspective of our social values -- leads to the methodological question of how to reconstitute some meaningful substantive agreement in the broader society regarding our social objectives and the role of the school and the curriculum in reflecting and reinforcing those objectives. Deeper, more fundamental philosophical questions take precedent, however, as to 1) whether any method can forge new consensus at this time in our transient, diverse society, and 2) if so, whether the curricular programs of the schools should revert to the passive social role of transmitting that consensus.

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[1] Alvin Toffler, Future Shock, (New York: Random House, 1970), p. 269.

[2] William O. Stanley, Education and Social Integration, (New York: Teachers College, Columbia University, 1953), p. 21-22.

Recent sociological interpretations of conflict, diversity and dissention in contemporary society point up these fundamental theoretical issues. Of particular use to our purposes are the interpretations of Phillip Slater, Charles Reich, and William Glasser.

CULTURES IN COLLISION

Phillip E. Slater in The Pursuit of Loneliness can speak of "cultures in conflict" which assert counter-priorities. The "old culture" gives preference to:

> ". . . property rights over personal rights, technical requirements over human needs, competition over cooperation, violence over sexuality, concentration over distribution, the producer over the consumer, means over ends, secrecy over openness, social reforms over personal expression, striving over gratification, Oedipal love over communal love . . . ."[3]

The "counterculture," on the other hand, tends to reverse each of these priorities, writes Slater, leaving almost every value at issue in the war between generations and cultures.

Scarcity is the key concern of the old culture; there are simply not enough material and natural resources to meet human needs. Consequently, competition for limited supplies is necessary, and efficiency and success become the criteria by which all individuals and systems are judged.

The counterculture argues, however, that fears of scarcity and the necessity of competition are spurious, that the need to postpone gratification is man-made, existing now only to maintain the established, indefensible system. Traditional self-restraint and self-discipline, therefore, should give way to stimulation and self-expression as educational and social ideals. According to these arguments, the curriculum of the old culture, defined primarily as restrictions imposed from without, must give way to a curriculum providing opportunities to express the self, to unfold and develop freely and naturally from within.

A CONFLICT OF CONSCIOUSNESS

In the Greening of America, Charles Reich interprets our social upheaval as a conflict of consciousness. Rugged individualism of the nineteenth century agrarian society characterizes

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[3] Phillip E. Slater, "Cultures in Collision," Psychology Today, Vol. 4, No. 2 (July, 1970), p. 31-32.

"Consciousness I." Many of the tenets of this life-perspective can be identified in current election-year rhetoric:

1) The primacy of individual self-effort and hard work.
2) Self-restraint and self-denial coupled with suspicion of others, organized labor and big government.
3) A belief that human nature is fundamentally, even inately evil, so that aggression and competition are the laws of nature.
4) Success — or failure — is determined primarily, not by social conditions, but by inner moral character. ("Where there's a will, there's a way.")

Reliance upon organizational hierarchies and institutional rewards, however, characterizes the second "consciousness" identified by Reich. "Consciousness II" places its faith in . . .

1) Subordinating the self to the requirements of occupation and institution.
2) An affirmative government regulating private activities and businesses, through planning and welfare.
3) Allegiance to the rational and procedural rules as means of developing social consensus.
4) The possibility of social progress and reform through technology, science, and dedication to the goals of organized interests.

Since the mid-sixties a new generation has spontaneously emerged, claims Reich, whose foundation is liberation from "automatic acceptance of the imperatives of society and the false consciousness which society imposes."[4] This Consciousness III asserts the basic attitudes of the "counter-culture" and incidentally much of the philosophy of Existentialism:

1) The individual, the only true reality, has the prerogative to choose his own values, to design his own life style.
2) Thus, in "real life" Consciousness III's are not competitive; they neither evaluate others by general standards nor struggle against.

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[4] Charles A. Reich, The Greening of America, (New York: Bantam Books, 1971), p. 214.

3) Concepts of excellence and merit are rejected on the assumption that each person has his own unique worth and individuality.
4) Community and personal relationships are matters of accepting others for what they actually are -- not for their title, position, authority or power -- and being wholly honest with others, never manipulative or coersive.

The Consciousness III attitude toward career is evidenced by the values they reject. The goals of position, status, power, security, possessions and social dignity are not only wrong, they are unreal, for they are goals which have no relationship to personal growth or individual satisfaction. Thus, Consciousness III people do not aspire to a career along vertical, esculator lines leading to these unreal goals. They conceive of life as a whole series of goals and choices, and a career as something that will be constantly changing "a career comprises the many different experiences, some planned, some fortuitous, that one might have. Instead of intense, ambitious concentration, one can relax and see what happens."[5]

SURVIVAL AND IDENTITY

William Glasser has seen a new society emerging in the past twenty years or so -- "the civilized identity society" -- which he contrasts with previous "survival societies."

The survival society, characterized by conquest and aggression, was a goal-oriented society. To survive, "men relinquished their individuality and became subservient to the group. Work became necessary, and strong men, to insure their own survival, forced or persuaded others to labor for them."[6]

The identity society, on the other hand, concerns itself with the role of being human -- the rediscovery, redefinition or reverification of what it means to the individaul to be free, to enjoy the company of others and cooperate with them to feel pleasure and personal satisfactions. Human rights and privileges became more precious than social obligations and corporate duties. A successful identity, a pleasurable belief in self, a valuing of the companionship of others for reasons of expression rather than survival or security pursuing, a role independent of any specific goal; such are the fundamental characteristics of the identity society.

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[5] Ibid., p. 258.

[6] William Glasser, "The Civilized Identity Society: Mankind Enters Phase Four," *Saturday Review*, February 19, 1972, p. 28.

Whether we rely on Slater or Reich or Glasser to help us interpret the "cracked consensus" of contemporary discommunity, several common characteristics of their concepts of the counterculture, Consciousness III, and the civilized identity society emerge to provide some interpretive foundations for curriculum decisions. First, there is a rejection of the need and necessity of a hierarchial groupism which submerges the individual in competitive, aggressive struggle for limited resources and survival, and controls him through institutional rewards; concommitantly there is in each of these perspectives an affirmation of community togetherness and cooperation that does not stunt individual integrity or inhibit honest, straight forward individual self-expression. Secondly, there is an opening and freeing reliance on process, method, style and means rather than on stratifying and stultifying substantive goals, standards, products, achievements, rewards, possessions, and successes. Activity, effort and expression are valuable — if at all — in themselves and do not require certification or justification according to external criteria or the ends achieved. Accordingly, in the third place, the novel elements of contemporary culture and consciousness place little value on social consensus and reasoning which justify or defend or rationalize such social processes as work, formal learning, economic competition and institutional loyalty.

BEYOND FREEDOM AND DIGNITY

All of this adds up to an overwhelming rejection of the intrinsic worth of institutionalized power and authority, of material values as such, and the political power to manipulate and control; and an abhorance for the dehumanizing process of evaluation by general standards which inhibit individual styles, integrity and feelings. Except for the critical loss of consensus, continuity and community, one would be thoroughly surprised to realize that the two most popular current educational efforts at curriculum development and evaluation run counter to these perspectives in every respect. I refer to B. F. Skinner's neo-behaviorism that places man "beyond freedom and dignity," and to the concept of accountability based on student-achievement of prescribed, observable behavioral objectives.

The inner, autonomous man, which is the focus of the most recent attempts to understand and rise above contemporary value conflicts, Skinner explains a way on the basis that such individuality, with its freedoms, feelings, integrity, and intentions, cannot be observed, cannot be measured, cannot be rationally ordered and, therefore, cannot be conditioned and controlled. Only external behavior can be controlled by environmental contingencies and therefore must be the only assertable reality if there is to be a technology of behavior. For Skinner, man is merely "a repertoire of behavior." He locates values in the objective social contingencies arranged to control individual behavior, neither in the individual's feelings about them or his interdependent relationships with them. Only things can be good or bad. Thus, for Skinner man can have no control of self, not only because there is no self, but also because there are no inner values by which individual men may deliberately direct their own behaviors.

Nevertheless, Skinner contradicts himself and ultimately relies on the inner man by claiming that "we can change the contingencies through intentional design."[7] Ultimately then, Skinner must rely upon a technocratic elite to control the masses; "we must," he says, "delegate the control of the population as a whole to specialists — to police, priests, teachers, therapists, and so on, with their specialized reinforcers and their codified contingencies."[8] There is no room to debate the means by which Skinner would reconstruct consensus and conformity to social expectations.

Undoubtedly, Skinner is matter-of-factually right. Human beings do respond to contingencies within their environments, and we are controlled by external reinforcers. The questions, the objections, are normative: *should* external stimuli selected by an elite core of techno-behavioral specialists, including curriculum designers, control and condition individual behavior? *Ought* the pressures and powers of specialized reinforcers be allowed to entice and reward acceptance of the imposed social consensus? Are the *aims* of education fulfilled by the teaching and learning of behavioral styles prescribed by self-proclaimed or socially empowered authorities? Where is the counter-culture priority of human needs over technological requirements? The Consciousness III prerogative of the individual to choose his own values and create his own life-style? The goal-independent pursuit of human role in the identity society? The affirmation of community that does not deny individuality? The value of human activity in recreating its own meaning and worth independent of external generalized criteria? A behavioral technology removes these alternatives, the opportunities to direct one's own experiences, and the necessary ingredients to all learning -- risk, chance, and choice.

WITHOUT FREEDOM, NO ACCOUNTABILITY

Normative inquiries of these types lead to a well-known axiom of ethical theory: without, free choice among meaningful, viable alternatives, there is no moral responsibility. Without freedom, there can be no accountability. The same psychological theories and philosophical tenets that provide the means of controlling behavior also remove justifications for holding one accountable for his behavior that is induced and enticed from without.

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[7] B. F. Skinner, "Beyond Freedom and Dignity," *Psychology Today*, Vol. 5, No. 3 (August, 1971), p. 65.

[8] Ibid., p. 72.

The notions of accountability, competence-based instruction and behavioral objectives are motivated by high ideals to give the public its money's worth and both the teacher and the student a fair and honest evaluation. With respect to subject-matters and skills such as mathematics, reading and historical, social and scientific matters-of-fact, the learning of which does immanate behavioral changes that are observable and therefore measurable, these professional efforts to keep the school system, the teacher and the student honest are reasonably appropriate. But there are affective and aesthetic developments, which are rightly within the domain of public education support, and which may be a part of education as changed behavior, but which do not necessarily amount to discernable behavioral changes or performances that submit to common objectives. I have in mind such processes as creative self-expression and communication, scientific hypothesization and social problem-solving, historical and literary interpretation, conceptualization, theorizing, contemplation — indeed, all of the higher intellectual and artistic processes that go beyond mere memorization, recall and description of matters-of-fact. For the learning and utilization of these intellectual styles there are no universal or objective criteria for the immediate evaluation of performance. The standards for such intellectualizing and appreciating may very well lie primarily within the individual who experiences them and only secondarily or incidentally in common value bases that can be expressed in behavioral objectives.

May I therefore, suggest for consideration the value bases of humanistic psychology as an alternative to Skinnerian operant conditioning, using Carl Rogers as the representative of this approach, merely as a means of contrasting the range of alternatives available to curriculum developers.

FREEDOM TO LEARN

Rogers sees the work of the educator to be:

> ". . . inextricably involved in the problem of values. The school has always been seen as one of the means by which the culture transmits its values from one generation to the next. But now, this process is in upheaval, with many of our young people declaring themselves "dropouts" from the confused

> and hypocritical value system which they are operating in the world. How is the educator -- how is the citizen -- to orient himself in relation to this complex and perplexing issue?"[9]

Rogers begins to answer his own question by identifying the locus of values, not in things that control human behavior from without, but firmly within the individual. Instead of universal, cosmic, absolute values, or a wholly objective value system "out there" imposed by some elite group of rulers, educators, philosophers or priests, Rogers asserts the possibility of human value directions emerging from within individual experience.

To be sure, we do "introject" the value judgments of our own society, taking on the values of the context as our own. To that extent, claims Rogers, we lose touch with our own individualistic, organismic valuing process. The person, often thought of as maturing socially, has actually "deserted the wisdom of his organism, giving up the locus of evaluation, and is trying to behave in terms of values set (for him) by another, in order to hold love."[10]

Behaviors that have gained approval are adopted by the individual in an attempt to gain self-esteem from others and social approval. Such introjected concepts often vary sharply with the individual's own experience. The discrepancy between the unrecognized valuing process within and the imposed or introjected values is a major part of the estrangement of modern man from himself -- the basic cause of current social value crises as well as the major problem of education.

But curriculum developers and educators in general continue to manipulate the learner, taking advantage of his need for security, and his desire for acceptance and social prestige.

Rogers suggests that we restore contact with individual experience on the grounds that each person has worth to be valued in his own uniqueness and separateness. The feelings and intentions of the individual, as well as his reason, can be trusted to serve as the locus of evaluation.

This suggestion at first sounds selfish, anti-social, dangerously anarchistic. But this does not prove to be the case, for when the individual is prized as a person and as such is:

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[9] Carl R. Rogers, Freedom To Learn, (Columbus, Ohio: Charles Merrill Publishing Company, 1969), p. 239.

[10] Ibid., p. 244.

> ". . . free to choose whatever he deeply values, he tends to value those objects, experiences and goals which contribute to his own survival, growth and development, and to the survival and development of others -- given a climate of respect and freedom in which he is valued as a person -- the valuing process within him would lead to emerging value directions which would be constant across cultures and across time."[11]

Using the valuing process as a basis for curriculum decisions, therefore, does not, require us to impose "external," "objective" social values on the individual learner. The task of the curriculum is to provide alternative experiences and environments which, instead of directing behavior for the student, allow him to sense the dignity and worth of his own individual being as the ground of freely, openly choosing values in common with all others who retain the locus of evaluation within themselves. Ultimately curriculum development faces the challenge of providing each learner with the opportunities to select freely for himself, apart from any arbitrarily imposed authority, his own values, life-style, and career.

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[11] Ibid., p. 254.

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ADAPTATION OF CURRICULUM

ADAPTING CURRICULUMS TO LOCAL NEEDS

by

James E. Wall*

INTRODUCTION

This paper will discuss a brief rationale and important factors pertaining to the adaptation of vocational-technical curriculums to local schools. An education oriented systems approach will be used to explicate these factors. The roles of instructors and the administration in adapting curriculums will be presented. The Instructor's Manual as a key document in adapting the instructional system to the needs of a local school will be described.

The major problems in adapting curriculums to local systems and their needs will vary greatly among individual schools. However, the broader problems encountered will probably pattern themselves around the following:

1. Failure of the administration to anticipate the problems which instructors will encounter, and the lack of feedback mechanisms, both of which make it impossible to cope with unanticipated problems as they arise during the adaption period.

2. Failure to modify existing established practices which work against the requirements of the curriculum, e.g., failure to focus on the learning process instead of course content.

3. Inability of instructors to carry out new roles because of lack of understanding and inadequately developed skills, or because instructional procedures and materials lack specificity and/or are not available.

4. Increasing frustration of the instructors following initial enthusiasm as they become aware of their inability to handle the learning situation in the prescribed manner.

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Briefly, then, the larger problems of curriculum adaptation usually center around the lack of necessary resources and materials required to successfully implement a new curriculum component. Organizational norms, traditional role functions, vested interests, and sheer inertia are among the barriers to adapting curriculum to local needs.

More specifically, however, many problems incurred in adapting curriculums to local needs stem from the fact that available curriculums and their accompanying materials have not been subjected to rigorous field-testing or validation. The learning effectiveness of some materials has not been empirically established. This holds for many of those curriculums produced by both commercial concerns and publicly supported agencies. For instance, an investigation of textbooks in 1969 by the non-profit, Manhattan-based Educational Products Information Exchange Institute (EPIE) indicates that under one percent of the approximately 14,000 different textbooks being sold to schools today has been systematically tried out to see how much students actually learn from them. According to EPIE's data, less than ten percent of the current "best selling" school textbooks were field-tested before publication.

In some cases regarding commercially prepared materials, simply the reactions of salesmen in the field are viewed as the field-testing that is supposed to constitute so-called validation. When field-testing actually refers to tests of materials with students, it is usually done just prior to publication with no chance of using the results to revise and improve the product.

The same might be said about the reactions of over-zealous "change agents" who represent publicly supported curriculum development agencies. Their reactions to how rapidly schools are adopting and adapting curriculums do not constitute proper field-testing.

By far the most discouraging area is that of programmed instruction. EPIE's examination of 653 programmed instructional products now used in major curriculum areas, including vocational and technical education, revealed that evidence of effectiveness is available for only seven percent of these materials. Some "field-testing" was claimed for another eight percent. A cursory examination of the remaining 3,000 programs, less central to the school curriculum, indicated an even smaller percentage that appears to have been learner-verified.

Most schools, when selecting curriculums and curriculum materials, rely almost completely on examination and review of materials plus (in some cases) discussions with sales representatives. Only rarely do selection committees in local schools use the results of the student performance data obtained from field-tests of the materials conducted in local classrooms.

Fortunately, some research exists which has examined whether it is possible to infer the learning effectiveness of curriculum materials simply by examining them. This research raises serious doubts about the reliability of judging the quality of learning effectiveness without the help of student feedback (verification).

One of these research studies examined the evaluation techniques of a group of teachers and a principal. They were asked to review and rank for effectiveness alternative versions of a set of materials on which evidence of effectiveness with learners had been gathered by the researchers, but was not made available to the educators. With no evidence of effectiveness available to them, the educators were strikingly unsuccessful in judging these materials accurately. The correlation between their judgments and the actual performance of the materials with learners was -.75! Despite this fact, most school people and members of the education industry continue to put their faith solely in examination and review rather than evidence of actual performance when judging educational materials.

Any responsible effort to create or select materials of proven learning effectiveness must use the tryout and revision process. These terms, or concepts, are the designer's way of saying that the learning effectiveness of an educational product will be improved if it is taken through a systematic cycle of tryouts with learners followed by revision based on feedback from those learners. Through appropriate sampling, a small group of "target" students can give the product developers ample opportunity to detect product weakness and revise accordingly.

Briefly, then, a major problem in adapting vocational-technical curriculums to the needs of local schools is that many available curriculum materials and programs simply do not have evidence of their learning effectiveness explained in the user's or instructor's manual. Such evidence must be made available to local school personnel before sound decisions can be made to adopt and adapt curriculums.

STRATEGIC ROLE OF CURRICULUM PERSONNEL

Curriculum developers or designers, either as a group or staff in a laboratory or as an individual coordinator on a state staff, have a unique opportunity to play a strategic role in adapting curriculums to local needs. A "strategy" is referred to here because the single act of adapting an individual curriculum component or piece of material to a local school situation cannot be separated from the larger, more comprehensive process of innovation diffusion, or what some may call merely getting changes to take place.

The strategic role referred to here is that of establishing an interactional rapport between the curriculum designer(s) and the local school system personnel. This has been referred to by some individuals as a change agent -- client system relationship, where the curriculum designer(s) is the change agent and the local school and its personnel comprise the client system.

On the one hand, there is the change agent (individual or agency) who perceives the need for change. On the other hand, there is the client system (local school system) which needs changing. This statement in no way should be misconstrued as implying that change could not be initiated from within a school system. Change originating from within a school system is the very essence of planned, self-renewing change. Any strategy for effecting change in local programs of vocational and technical education must consider the effectiveness of communications between the change agent and the client system. This is referred to as the deliberate and collaborative relationship between change agent and client system. The strategy should also include measures for determining the potential for more effective continuing communication if lasting change is to persist.

Certain relationships exist between the change agent and the client. These are: (1) the change agent (sender) and the client system (receiver) are interdependent in the sense of the one having no relevance without the other; (2) there should be a series of communications (links as in a chain) extending over a period of time between the change agent and the client system; (3) the series of communications between change agent and client system is not exclusively between these two entities; some communication is indirect and is mediated through other individuals (e.g., opinion leaders) and groups to which each belongs; (4) both the change agent and the client system have definite positions in the social structure and their communication roles are affected accordingly; and (5) communications between change agent and client system are interdependent acts of ongoing interaction; the "two-step" flow of information is part of this pattern. Havelock (1969) succinctly describes the linker role as a catalyst, as a resource linker, as a solution giver, and as a process helper.

The change agent, as an individual, may or may not be a member of a knowledge-producing (research and development) organization, but it is necessary that he have interactional relationships with such an organization. He may serve as a linkage between the knowledge-producing organization and the knowledge-applying organization. His influence and consequential effect on a client system will not be better than his prestige or image, or that of the knowledge-producing organization with which he maintains interaction.

Individual change is a correlate of group change. Group rather than individual norms of values-beliefs are more representative of the wider culture. Hence, the group tends to influence the values and attitudes of an individual. However, individual changes in values tend to lag behind group changes. This lag may be accompanied by intra-personal tension and frustration which become the correlates of resistances to adoption of innovations. Here again, communication is the key to overcoming such problems. The internal communications of a client system tend to build uniformity of values and beliefs. This is an extremely important consideration in the building and maintenance of an environment that is conducive to lasting or planned change.

Another aspect of communication deserving attention here could be called external contacts. In general, the greater the number of lines of contact and communication that a school system has with other educational systems, knowledge-producing organizations, and the like, the greater will be the likelihood of acceptance of change by that school system. Diffusion research indicates that schools which are innovation-adoption prone are characterized by teachers who attend out-of-town conferences, meetings, institutes, and who read widely to find new ideas. Research has concluded that "innovativeness varies directly with cosmopoliteness (defined as the degree to which an individual's orientation is external to a particular social system)."

Effective communication requires that certain conditions must be met. Members of the client system must: (1) be exposed to the message; (2) interpret or perceive correctly that action or attitude which is desired of them by the change agent; (3) remember or retain the content of the message the change agent transmits; and (4) decide whether or not they will be favorably disposed to or influenced by the communication. The change agent must be authoritative and sincere with the client system. He must represent a reliable source of information as perceived by the client system.

Just as nations are classified as having open or closed societies, so are school systems. Some of the determinants of "open-closedness" are the extent to which: (1) external contacts are initiated and maintained; (2) the quality of this interaction is established and maintained; (3) major decisions concerning changes that occur locally are made externally; and (4) local coordination exists between educational programs and other programs of community improvement.

To summarize, the strategic role of the curriculum designer/developer in adapting curriculums to local schools be that of developing and maintaining communication and establishing an ongoing change agent-client system relationship. These relationships are vital in the curriculum development phase where field testing is conducted as part of the validation process.

A PROBLEM-SOLVING MODEL

The concept of problem-solving has been used by others as a basis for developing strategies and tactics for implementing change in schools. One of the most recent and comprehensive efforts has been that of Havelock (1970) in which he presents two ways of looking at stages of innovation or change, one from the viewpoint of people who are being changed (client system), and the other from the viewpoint of someone (change agent) who is trying to bring about change. Havelock's premise is that a client system can follow a problem-solving model if they have help from a change agent. He then relates this premise to a six-stage model for innovation or change. Havelock's model also implies "action" in that he presents specific activities and techniques for use by change agents. In these respects his six-stage model for innovation is more closely akin to a strategy for implementing change than it is to a change process.

Havelock (1970) lists and discusses a number of strategies and tactics which are apropos to each of the six stages in his model for innovation. His "Guide" is designed for and directed specifically to the change agent who may be internal or external to the client system. A change agent may be any one of the following:

Some Examples of People Who Might Act as Change Agents

1) Curriculum and Research Coordinators
2) Directors or Coordinators of Federal Programs
3) State Department Program and Curriculum Consultants and other state staff personnel
4) Regional Laboratory Dissemination Staff
5) County and Intermediate School District Consultants
6) Supplementary Center Staff (e.g., those supported by Title III of ESEA)
7) Continuing Education and Extension Instructors
8) Professors in Schools of Education Who Do Field Consulting
9) Salesmen of Educational Products and Publications
10) Superintendents and Other Administrators (at least part of the time)

11) Teachers (at least part of the time)
12) Counselors (at least part of the time)
13) Board of Education Members (at least part of the time)
14) Students (at least some of them some of the time)
15) Concerned parents and other citizens.

To help the reader gain a better grasp of these strategies, Havelock's six-stage model will be described here.

Stages of Havelock's Model for Innovation in Education

Havelock (1970) stresses that "the focus of innovation planning has to be the USER himself: his needs and his problems must be the primary concern of educational reform." The stages of his model are (1) building a relationship; (2) diagnosing the problem(s); (3) acquiring relevant resources; (4) choosing the solution; (5) gaining acceptance; and, (6) stabilizing the innovation and generating self-renewal. Each stage is presented below along with Havelock's description of how a change agent works in it.

1. Building a Relationship. Havelock indicates that this stage is perhaps the most important one for the change agent. The change agent must develop a strong, viable, helping relationship with the client or school system, as well as with other elements of the community. Maintenance of this relationship in a continuing fashion is also important. Havelock sets forth procedures for establishing the relationship and criteria for judging its viability.

2. Diagnosing the Problem(s). Accoring to Havelock, diagnosis is a systematic attempt to understand the situation by both the change agent and the client system. The change agent helps the client system "articulate the need(s)" of the system. Delineation and definition of the problem(s) and underlying causes are focused on in this stage in order to establish goals and objectives. Goals and objectives should be made in terms of outputs and outcomes and these should be communicated to persons who are interested, concerned and affected by them. Havelock cautions against the use of too much time in diagnosing, but stresses the importance of determining and defining client needs before a solution(s) to problems is suggested.

3. Acquiring Relevant Resources. In this stage Havelock stresses that the focus is on "resource acquisition, not resource evaluation or utilization." Furthermore, acquisition may take place at any point in the planned change process. In order to innovate, resources are needed: (1) for diagnosing client system needs and problems; (2) for creating awareness within the system of possible solutions; (3) for comparing (or evaluation-before-trial) alternative solutions; (4) for trial of an innovation in the client's

setting; (5) for evaluation-after-trial (which must be generated from within the client system); (6) for installation (including initial costs, new staff, training, readjustments, etc.); and (7) for maintenance (long-term costs, etc.). Havelock presents procedures for acquisition of resources in this stage.

4. Choosing the Solution. In delineating this stage, Havelock suggests a "four-step sequential process." These steps are: (1) deriving implications from research; (2) generating a range of solution ideas; (3) feasibility testing; and (4) adaptation.

In deriving implications from research, Havelock describes the manner in which a change agent retrieves summary statements from research reports, how these statements are reformulated and checked for understanding, how the statements relate to the client system, and how statements can be used to infer implications for action.

In generating a range of solution ideas, Havelock indicates that the ideas may come from research reports, other client systems, or commercial sources. Some solutions may be suggested from the statement of objectives. However, Havelock stresses the desirability of generating solutions or ideas from within the system by using such techniques as brainstorming.

In feasibility testing, Havelock emphasizes application of testing, comparing, and judging. Measurement criteria include benefit to client system, workability of the solution, and diffusibility or acceptance by client.

5. Gaining Acceptance. The four previous stages were focused on how the change agent prepares for a program of change; they culminate in the choice of a tentative solution. Havelock states that the fifth stage "is the time for transforming intentions into actions." He summarizes many of the principles and factors of innovation diffusion in discussing this stage, some of which have been discussed earlier in this document.

In this stage, Havelock considers: (1) how individuals accept innovations; (2) how groups accept innovations; (3) how to choose a communication strategy which is effective for individuals and groups; and (4) how to maintain a flexible program for gaining acceptance. It is imperative that each individual involved in the change be allowed time to understand it, to learn how to use it, and to become accustomed to required changes in his own attitude and behavior. Peer group interactions usually reduce the time required in accomplishing these things. Because the school is a client system of interacting and interdependent persons and groups, time must be allowed for them to understand how an innovation is adopted by a social group. Not only must facts and information be communicated to individuals, but indications of support and approval from the change agent must be conveyed. Constant review and assessment is necessary as implementation proceeds. There is a serendipitous dimension in the role of the change agent in this stage of the change program. Havelock sums up this stage by stating that "every attempt should be made to prepare a schedule which is both flexible and schematic -- a difficult balance to strike, but a crucial one."

6. Stabilizing the Innovation and Generating Self-Renewal. Havelock stresses the fact that a change agent's task is not completed after traversing the first five stages. The sixth stage is important to a continuous change environment. Stabilization (some have referred to a similar stage as "institutionalization") and self-renewal are key concepts in long-term maintenance of innovations. This step is especially important when external sources of funds are used to support initial implementation of an innovation with the knowledge that such finds will terminate after a specific period. Actually, this factor should have been considered in previous stages.

Havelock indicates that continuance of an innovation can be insured by the change agent helping the client system: (1) to perceive continuing rewards from the innovation; (2) to become accustomed to the innovation; (3) to adjust it to his structure; (4) to continually evaluate the innovation over time; (5) to provide for continuing maintenance; and (6) to continue adaptation capability for the innovation.

Insofar as self-renewal is concerned, Havelock stresses that "the client should learn to be a change agent for himself." To do this there must be within the client system: (1) a positive attitude; (2) an internal subsystem devoted to bringing about change; (3) an active inclination to seek external resources; and (4) a perspective on the future as something to plan for. The viable change agent-client system relationship established in the first stage should be maintained in effect throughout the sixth stage. This would enable the change agent to assess his approaches to the entire process.

ADAPTATION ROLES OF INSTRUCTORS AND ADMINISTRATORS

As indicated before, various kinds of school and non-school persons have roles to play in adapting curriculums to local needs. Specifically, instructors play a vital role in this process, especially in operationalizing and installing the curriculum. Administrators such as superintendents, principals, local directors of vocational education programs, etc., also play vital planning, supportive, and coordinative roles in the process. Curriculum change and adaptation efforts must always be focused on improving what the instructor does and how he does what he does. It must also be recognized that the local school system superintendent and building principal, as "gatekeepers," essentially set the climate or tone for curriculum adaptation and change.

The administrator's and instructor's roles in curriculum adaptation can be broken down into the following major parts: (1) readiness, (2) selection, (3) equipment/supplies procurement, (4) workshop, (5) inservice education, (6) assistance, (7) implementation, (8) assessment, (9) maintenance, and (10) demonstration. Each of these is presented below along with a few pertinent activities for each.

Readiness. All instructors should be involved in discussions about the curriculum that is to be adapted. District and state subject matter specialists should be involved from the beginning. Help instructors to understand requirements of the new curriculum insofar as their shop, laboratory, or classroom style is concerned. Schedule inservice sessions to build faculty confidence. Collect and circulate curricular information, either from the source (design agency) or the Instructor's Manual. Identify instructor cliques and involve them. Allow time for faculty inspection and discussion. Use instructor input to determine need for new programs.

Selection. Along with instructors, analyze curriculum to be replaced if one already exists. With the staff, assess the vocational instruction program of the school. Construct a priority list of needed curriculum components. With the staff, prepare a descriptive statement of what each curriculum will be expected to produce in terms of student as well as instructor behavior. Provide time for curriculum review and selection by visiting other schools that have similar curriculums under way. Obtain outlines and portions of each curriculum's content, methods, and materials for the staff. Make sure there is space to house components of a potential new curriculum. Encourage instructors to try using a lesson from new curriculums.

Equipment/supplies procurement. Examine curricular hardware and software before ordering. All elements of the curriculum should be available to the instructor. Establish a procedure for instructors to document flaws in the new curriculum. Instructor reports should be sent to the curriculum designer. Make sure all instructors are aware of errors immediately. If the curriculum requires expendables, establish a petty cash fund for the instructors to use.

Workshop. Experiences for instructor workshops should be carefully balanced with the "hands-on" sessions included. Provide equipment for workshop sessions. Try to obtain collaboration with a local university to get college credit for the instructors participating in the workshop. Ask instructors what they want included in the workshop. Evaluate workshop experiences through personal involvement. Organize relevant workshop activities. Schedule summer workshop training for instructors which focus on the curriculum to be adapted.

Inservice education. Establish a series of inservice workshops on the new curriculum during the year. Provide consultants for inservice education. Establish a series of subject matter and/or grade level meetings with a consultant.

Assistance. Provide assistance from a variety of sources, such as R & D centers, regional or state curriculum labs, educational consultants, and commercial representatives. Determine assistance cost and degree of involvement. Provide assistance when the curriculum has been put into regular practice by obtaining either internal or external help. All external or consultant service should be made explicit by defining his role and responsibilities in detail.

Implementation. Extreme care must be exercised in implementing a sequential curriculum which spans several grades. Establish the identity of crucial prerequisites and discuss thoroughly with instructors the importance of teaching concepts in sequence. Give the new curriculum a fair trial by scheduling the necessary time for it to be taught. State department approval must be obtained to implement a new curriculum. Use the curriculum in the manner described by its designers. Ensure that instructors understand the instructional goals of the curriculum. Instructors should keep careful records of the curriculum installation. Curriculum maintenance costs should be projected over a three- to five-year period.

Assessment. The ultimate question is: What did the students learn? Plan for continuous assessment. All instructors should be aware of student goals and objectives that should be explicit in any well-designed curriculum. Document successes and failures. Performance tests seem best to measure student achievement, but skill and knowledge tests also are needed. Establish with instructors the importance of periodic review and evaluation. Prepare a schedule of times when instructors will provide data on adaptation efforts. Get instructor's candid expressions of opinions.

Maintenance. Identify instructor-leaders as immediate and continuing source of support to fellow instructors. Hire new or replacement instructors for the new curriculum. Provide for replacement of expendables, repair of equipment, etc. Plan for activities, publicity, and dialogue that maintain much of the original enthusiasm for the new curriculum. Provide supportive assistance to new as well as old instructors of the curriculum. Distribute descriptive materials about the new curriculum to other teachers and administrators in the school. Provide workshop and/or inservice training for new instructors.

Demonstration. Allow the instructors to help other schools. This activity can be coordinated by the state and/or district supervisory staff. Share all financial and other information with others. Free instructors for informal discussion with observers. Organize a realistic demonstration program. Keep visitor groups small and allow free discussions with both instructors and students. Publish a report on the curriculum adaptation, problems encountered, and successes achieved.

THE INSTRUCTOR'S MANUAL

Much of that which goes into the development of a curriculum is not readily apparent as one peruses the materials. The capabilities and limitations of an instructional system are not easily seen by the instructors who will use the system. Such information is vital for adapting the curriculum and should be contained in the Instructor's Manual. The manual should present relevant external information about properties which are not apparent on inspection.

Information in the manual must show the instructors and other school personnel how the curriculum was developed, what it teaches, how effective or valid it is, and how it can be implemented. Following are the major categories of topics that should be contained in the manual:

Course Description. The following information should be included in the course description:

1. The course title and the purpose and scope of the curriculum; e.g., what jobs or occupations the curriculum prepares the student for, and at what level in a career ladder it prepares him for. Briefly list the kinds of competence the curriculum has been designed to produce when it is used in the prescribed manner. The manual also should contain general interpretive information to help the non-technical user determine the curriculum's relevance to his educational purposes.

2. A concise outline or brief overview of the contents of the curriculum. What textual or curriculum sources were used in the selection and development of the content? How current were these sources?

3. A description of the format of the curriculum. State the number and length of lessons. List required student and instructor materials, instructional aids, equipment, and tools.

4. Instructional methods and techniques used in the curriculum. List size of student groups and physical arrangements of shops, laboratories, or classrooms. New instructional practices should be explained in detail since spuriously large temporary student achievement gains may result as a novelty effect when a new teaching device or procedure is first introduced.

Population Description. This information should describe the students for whom the curriculum has been designed. The population description should contain the following:

1. The age and/or grade level(s) of the learners, including reading and mathematics levels.

2. The prerequisite skills, abilities, vocational training, and related knowledge that also might serve as the base which achievement gains may be measured. Limits, particularly the lower limits, of the student population for whom the curriculum is intended should be included.

3. Physical and personal characteristics of the job for which the curriculum is designed to prepare persons.

Performance Objectives. The manual should contain a complete list of all the interim (enabling) and terminal objectives.

Criterion-referenced Tests. The manual should contain copies of all criterion-referenced tests. Test answers should appear on the tests or on separate answer sheets. Items on the criterion-referenced tests should be cross-indexed with their respective behavioral objectives. The criterion-referenced tests should exemplify what the designer expects the student to learn in the way of knowledge, skills, and performance.

Curriculum System Performance Data. The manual should contain explicit information about the steps taken to verify the effectiveness of the curriculum. This section of the manual should include the following:

1. A description of the students used to validate the curriculum, i.e., number of students, method of selection, age, background.

2. The conditions under which the tests were given, i.e., individual, small-group, and large-group testing procedures. This section of the manual should also describe the physical and social conditions of the curriculum's use and effectiveness--testing procedures in sufficient detail so that their essential features could be reproduced or replicated by another investigator if desired.

3. The development--test--revise--retest procedures used, and the data on learner's responses to preliminary versions of the curriculum. Records of responses to preliminary versions can provide a basis for its progressive revision and improvement prior to finalization.

4. The criteria used to determine when the curriculum was ready for finalization and printing.

5. The assumptions made and principles used in constructing the program.

6. The evidence on the curriculum's effectiveness based on comparisons measurements of student performance on pre-tests and post-tests. A clear distinction should be made between this effectiveness-test data for the finalized curriculum and any test data obtained in earlier tryouts of preliminary versions used as a basis for revision. (Changes made in the curriculum after the latter effectiveness-test data are obtained could throw doubt on the validity of these data for a demonstration of the curriculum's effectiveness.)

7. Any further information which would seem helpful in evaluating the reported effects of the program or the adequacy of the evidence on which they are based. The manual should present evidence to document that the gains in achievement reported can rightly be attributed to the effect of the curriculum's use rather than to extraneous causes.

Administering the Curriculum System. The manual should contain information on how the curriculum can be most effectively and efficiently used. The following items are suggested:

1. The role of the instructor and manager and facilitator of learning; guidance of student experiences.

2. Motivation information and techniques relating to the curriculum and future job projections.

3. Recommendations for articulating learning activities in this curriculum with those the student experiences in other school curriculums. Suggestions should be presented for relating this training to basic education and realistic work projects.

4. Recommendations for recognizing and handling individual differences among students. Explain how the amount of time learners of different ability might be spent on various portions of the program; how this time can be distributed.

5. Instructions for test administration, keeping student records, and conducting summative evaluation and reporting.

6. Special instructions for training the instructors who will use the curriculum.

SOURCES OF CURRICULUM MATERIALS

Sources of curriculum materials are so diverse, scattered, and numerous that an exhaustive listing of them would be impossible in a small paper such as this. Also, before one could finish listing all sources, several new ones would have been developed. Nevertheless, an attempt will be made here to at least offer a number of categories of sources which may be of some benefit to curriculum designers. (Incidentally, some of the sources included here can be viewed as a list of REFERENCES for this paper.) Examples shown under each category are merely a sampling of what could be included. The categories themselves and many of the examples are taken from A Guide to Innovation in Education, authored by Ronald Havelock, University of Michigan, 1970.

A. News Reports

1. Commission on Science Education Newsletter
American Association for the Advancement of Science
1515 Massachusetts Avenue, N.W.
Washington, D.C. 20005

2. Croft Newsletter Services
Croft Educational Services, Inc.
100 Garfield Avenue
New London, Connecticut 06320

3. Department of Classroom Teachers News Bulletin
National Education Association
1201 Sixteenth Street, N.W.
Washington, D. C. 20036

   Reports on current educational problems to help teachers strengthen their work.

4. Education Daily
Capital Publications, Inc.
Suite G-12
2430 Pennsylvania Ave., N. W.
Washington, D. C. 20037

   A daily news service to American education.

5. Education Recaps
Educational Testing Service
Rosedale Road
Princeton, New Jersey 08540

   Brief, pithy descriptions of the latest developments in education, educational technology programs and related issues and areas of interest.

6. Education U.S.A.
National School Public Relations Association
1201 Sixteenth Street, N.W.
Washington, D.C. 20036

   Notes latest developments in educational affairs including related political issues.

7. Education Product Report
Educational Products Information Exchange Institute (EPIE)
386 Park Avenue, South
New York, New York 10016

Provides the educational consumer with unbiased information and evaluations of materials related to educational technology (both hardware and software). Non-profit, non-biased professional cooperative serving the educational community.

8. Educational Research
American Educational Research Association (AERA)
1126 Sixteenth Street, N.W.
Washington, D. C. 20036

Publishes news of federal projects and funding in educational research, news of activities of foundations, institutions of higher education, and federal agencies, as well as association news, placement services, reviews of new publications and professional activities of members of AERA.

9. Educational Technology Magazine
Educational Technology Publications
140 Sylvan Avenue
Englewood Cliffs, New Jersey 07632

10. Evaluation Comment
Center for the Study of Evaluation
University of California at Los Angeles
145 Moore Hall
Los Angeles, California 90024

Provides a forum for the discussion of significant ideas and issues in the study of evaluation of educational programs and systems.

11. Measurement in Education
National Council on Measurement in Education (NCME)
Office of Evaluation Service
Michigan State University
East Lansing, Michigan 48823

Consists of special reports concerned with the practical implications of measurement and related research and their application to educational problems of individuals, institutions, and systems. Emphasis is upon uses of measurement rather than technical or theoretical issues.

12. School and Society
Society for the Advancement of Education
1860 Broadway
New York, New York 10023

B. Information Services

1. ERIC (Educational Resources Information Center)

ERIC is a national information system of the Office of Education, dedicated to the progress of education through the dissemination of educational research results, research-related materials, and other resource information that can be used in developing more effective educational programs. Through a network of 20 specialized centers, or clearinghouses, each of which is responsible for a particular educational area, the information is acquired, evaluated, abstracted, indexed, and listed in Research in Education, the monthly abstract journal of the ERIC system.

All the documents cited in the "Document Resume" section of the journal, except as noted, are available from:

ERIC Document Reproduction Service
National Cash Register Company
4936 Fairmont Avenue
Bethesda, Maryland 20014

Documents are produced in microfiche (MF) and in hard copy (HC). MF is a 4 x 6-inch sheet of film with up to 70 images, each representing an 8 1/2 x 11-inch sheet of paper. Microfiche readers, available from many manufacturers, are required to enlarge the images for reading purposes. Hard copy (HC) is a reproduction on paper in easy-to-read form.

The process of getting at the material that is collected and stored in the ERIC system is explained in "How to Use ERIC," a pamphlet available through:

The Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402

ERIC Clearinghouses are listed below, but individuals desiring additional information concerning ERIC and its functions can contact:

ERIC Central
Room 3013
400 Maryland Avenue, S.W.
Washington, D. C. 20202

ERIC Clearinghouses:

Adult Education
Syracuse University
Syracuse, New York 13210

Counseling and Personnel Services
University of Michigan
Ann Arbor, Michigan 48104

Disadvantaged
Teachers College
Columbia University
New York, New York 10027

Early Childhood Education
University of Illinois
Urbana, Illinois 61801

Educational Administration
University of Oregon
Eugene, Oregon 97403

Educational Media and Technology
Institute for Communication Research
Stanford University
Stanford, California 94305

Rural Education and Small Schools
New Mexico State University
Las Cruces, New Mexico 88001

Science and Mathematics Education
Ohio State University
Columbus, Ohio 43221

Exceptional Children
The Council for Exceptional Children
Arlington, Virginia 22202

Higher Education
George Washington University
Washington, D.C. 20006

Junior Colleges
University of California at Los Angeles
Los Angeles, California 90024

Library and Information Sciences
American Society for Information Science
Washington, D. C. 20036

Linguistics
Center for Applied Linguistics
Washington, D. C. 20036

Reading
Indiana University
Bloomington, Indiana 47401

Teaching of English
National Council of Teachers of English
Champaign, Illinois 61820

Teaching of Foreign Languages
Modern Language Association of America
New York, New York 10011

Social Science Education
University of Colorado
Boulder, Colorado 80903

Teacher Education
American Association of
Colleges for Teacher
Education
Washington, D. C. 20005

Tests, Measurement, and
Evaluation
Educational Testing Service
Princeton, New Jersey 08540

Vocational and Technical
Education
Ohio State University
Columbus, Ohio 43210

2. RIS (Regional Information System)

RIS is a concept or model for a regional information linkage system. It is intended to be a "one-stop" tool providing current awareness and reference services for all of the Michigan-Ohio Regional Educational Laboratory (MOREL) projects. This concept was developed at MOREL and the ASSIST Centers (see below).

a. MOREL (Michigan-Ohio Regional Educational Laboratory)

MOREL, whose funding has now been terminated, was originally set up to determine the regional needs as expressed by local public school educators, college and university personnel, state departments of education, research organizations and people from the business community, and to service such needs. While MOREL is no longer in operation, inquiries can be addressed to:

Laboratory Branch
U. S. Office of Education
Department of Health, Education, and Welfare
Washington, D. C. 20202

b. ARIS (Association Referral Information Service)

ARIS, through its Referral Library, makes available printed materials which contain indices, directories, bibliographies, documents, abstracts, materials on specialized information systems, and current periodicals.

Association Referral Information Service
Ohio Education Association
225 East Broad Street
Columbus, Ohio 43215

c. ASSIST (Activities to Support and Stimulate Innovation in Schools Today)

ASSIST's Center Information Service has been recognized as a national prototype using the concept of being a Regional Information System (RIS). It is intended to be a "one-stop" tool providing current awareness and reference services for Wayne County and the State of Michigan.

Activities to Support and Stimulate
Innovation in Schools Today - ASSIST Center
Wayne County Intermediate School District
33030 Van Born Road
Wayne, Michigan 48184

3. RISE (Research and Information Services for Education)

RISE is a regional information agency. Its services are available without charge to a specified group of Pennsylvania educational agencies. Additional agencies in Pennsylvania and other states are served on a contract basis.

Research and Information Services for Education
443 South Gulph Road
King of Prussia, Pennsylvania 19406

4. SRIS (School Research Information Service)

SRIS is an information service sponsored by Phi Delta Kappa to serve its members and any other interested educators or educational institutions.

School Research Information Service
Phi Delta Kappa Research Service Center
Eighth and Union Streets
Bloomington, Indiana 47401

5. Clearinghouse for Federal Scientific and Technical Information

The Clearinghouse serves as a focal point for the collection, announcement, and dissemination of 600,000 unclassified U. S. Government-sponsored research and development reports and translations of foreign technical literature to the scientific, technical, and industrial communities.

Clearinghouse for Federal Scientific
and Technical Information
National Bureau of Standards
U. S. Department of Commerce
Springfield, Virginia 22151

6. National Audiovisual Center

The National Audiovisual Center serves government, industry, educational institutions, and the general public as a central information, sales, and distribution point for most government motion pictures, filmstrips, audio and video tapes, and other audiovisual materials.

National Audiovisual Center
National Archives and Records Service (GSA)
Washington, D. C. 20409

C. Libraries

Havelock stresses that most individuals are able to avail themselves of professional or curriculum libraries in their district, county, or local university. These resources have the advantage of being familiar and in close proximity to the working environment of the practitioner.

Unfortunately, the organization of library collections does not allow them to be responsive to specific user needs. Information is organized by title and topic, author, and, sometimes, by source (e.g., journals) which means that the library user may have to sift through a substantial quantity of irrelevant material when he is searching for information appropriate to a specific need. The assistance of a good librarian can be particularly valuable at this point.

D. Directories and Indices

Directories and indices of relevance to the field of education are published by governmental, professional, and commercial agencies. There is, unfortunately, no single index that lists all the types of written material or all the resource agencies one might want to use (e.g., some include only government publications or agencies; others exclude government resources). Most of the larger directories can be found in any public, university, or ERIC library and, probably, in the professional library of the local system.

1. Directory of Educational Information Centers. Published by the Division of Information Technology and Dissemination, Bureau of Research, U. S. Office of Education, 1969.

Available from:

The Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402

This directory, prepared for the U. S. Office of Education by the System Development Corporation, lists a wide range of information centers offering services to educators in communities throughout the United States.

2. Directory of Federally Supported Information Analysis Centers. Published by the Committee on Scientific and Technical Information (COSATI) of the Federal Council of Science and Technology.

   Available from:

   Clearinghouse for Federal Scientific
   and Technical Information
   National Bureau of Standards
   U. S. Department of Commerce
   Springfield, Virginia 22151

   This directory will be useful to educators when the specific topic area they are researching transcends the limits of strictly educational sources.

3. A Directory of Individuals, Programs, and Agencies Engaged in the Study of Change. Compiled by Elizabeth Mullins and edited by Richard I. Miller, 1967.

   Available from:

   Associate Dean
   School of Education
   Indiana University
   Bloomington, Indiana 47401

   This directory should be of great value to the practitioner who is unfamiliar with the use of other more general directories mentioned in this Appendix because it limits its focus specifically to change in education.

4. A Directory of Information Resources in the United States: Social Sciences. Published by the National Referral Center for Science and Technology, 1965.

   Available from:

   The Superintendent of Documents
   U. S. Government Printing Office
   Washington, D. C. 20402

   This book lists information resources in the United States which will accept and answer questions.

5. Directory of Special Libraries and Information Centers. Edited by Anthony T. Kruzas.

   Available from:

   Gale Research Company
   The Book Tower
   Detroit, Michigan 48226

6. Educational Directory.

   Available from:

   The Superintendent of Documents
   U. S. Government Printing Office
   Washington, D. C. 20402

   This annual directory consists of five volumes: (1) officers of education programs, by state; (2) all public school systems enrolling 300 or more students, by state; (3) accredited institutions of higher education, by state; (4) educational associations; and (5) educational agencies and personnel within the federal government.

7. The Education Index.

   Available from:

   The H. W. Wilson Company
   950 University Avenue
   Bronx, New York 10452

   This index is a cumulative author and subject index to a selected list of educational periodicals, books, and pamphlets. It presents a list of indexed periodicals and a directory of publishers.

8. Encyclopedia of Associations, Volume 1. Published by the National Organizations of the United States.

Available from:

Gale Research Company
The Book Tower
Detroit, Michigan 48226

The encyclopedia is concerned with information about non-profit American organizations of national scope covering topics of trade and business, education, religion, agriculture, social welfare, public affairs, health, athletics, veterans, labor, etc.

9. ERIC Publications

a. Current Index to Journals in Education (CIJE).

Available from:

CCM Information Corporation
909 Third Avenue
New York, New York 10022

This monthly journal provides indexing and annotations for articles in over 500 educational periodicals.

b. Research in Education (RIE).

Available from:

The Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402

This is an index, compiled monthly by ERIC, of all U. S. Office of Education research projects and other documents of educational significance. Abstracts are provided, as are subject, author or investigator, and institution indices.

10. National Directory of Newsletters.

Available from:

Gale Research Company
The Book Tower
Detroit, Michigan 48226

This directory contains information about 1500 newsletters and publications in agriculture, conservation, business and industry, education, humanities, public affairs, religion, etc.

11. Research Centers Directory. Edited by Archie M. Palmer, 1968.

Available from:

Gale Research Company
The Book Tower
Detroit, Michigan 48226

This is a guide to university-sponsored and other non-profit, permanent organizations which have continuing research programs in agriculture, business, conservation, education, engineering and technology, government, law, life science, mathematics, area studies, physical and earth sciences, or social sciences and humanities.

12. The Vocational-Technical Library Collection. Edited by Bruce Reinhart, 1970.

Available from:

Bro-Dart Publishing Co.
Williamsport, Pennsylvania 17701

E. Reference Books

1. Dictionary of Education, Second edition, Carter V. Good (ed.), New York: McGraw-Hill Book Co., 1959. This edition, financed by Phi Delta Kappa, provides definitions of the terminology used in education and related disciplines.

2. Digest of Educational Statistics. Washington, D. C.: U. S. Government Printing Office, 1966. This is a kind of statistical abstract of American education. It stresses quantities, i.e., number of institutions, number of programs, students, dollars spent, etc.

3. Documentation in Education. Fifth edition, Arvid J. and Mary A. Burke (eds.), New York: Teachers College Press, 1967. In addition to showing how to locate information or data, this book provides guidance for more sophisticated documentary or bibliographic work in education.

4. The Educational Information Center: An Introduction. Los Angeles: Timmon-Brown, 1969. Prepared by the System Development Corporation with support from the U. S. Office of Education, this is a guide to the establishment and operation of a local information center.

5. Encyclopedia of Educational Research. Fourth edition, Robert L. Ebel (ed.), New York: Macmillan Company, 1969. Offered by the American Educational Research Association, the Encyclopedia cites references for and describes research findings on topics in education ranging from academic freedom to vocational and technical education.

6. Information Retrieval Thesaurus of Education Terms. Center for Documentation and Communication Research, Case Western Reserve University. An alphabetical and classified display of approximately 2,100 terms in the education field is provided.

7. International Encyclopedia of the Social Sciences. David L. Sills (ed.), New York: Macmillan and the Free Press, 1968, Index in Vol. 17. This is possibly the best of the general encyclopedias dealing with the whole scope of the social sciences. It does not cover raw data.

8. National Society for the Study of Education Yearbook. The University of Chicago Press. This is an annual volume on current thought and practice in important fields of education. A list of all yearbooks may be obtained by writing to the NSSE, 5835 Kimbark Avenue, Chicago, Illinois 60639.

F. Consulting Organizations

Each consulting organization has its own orientation toward working with client school systems. Details about the extent of their operations and procedures can be obtained by inquiring directly with such an organization.

Basically, they can offer a client system the following: an enlarged research data base for organizational planning and decision-making; assistance in research and in implementing change; and assistance in diagnosis or evaluation of the client's present state.

1. RELs (Regional Educational Laboratories)

The regional educational labs are private, non-profit corporations which are funded, in whole or in part, under Title IV of the Elementary and Secondary Education Act of 1965. Each lab operates under a contract with the Division of Educational Laboratories, Bureau of Research, U. S. Office of Education. The labs are organized geographically, dividing the nation into several regions. They are designed to take the product of basic research and develop programs that will link this research with practice in the schools of their respective regions. At this time, most of the laboratories supply direct services only to "demonstration" or project participant schools. However, all will answer specific requests for information about programs which they have under development.

The laboratories differ from research and development centers in focus, competition and activities. Centers emphasize research and development while laboratories stress developmental design and implementation strategies.

a. Appalachia Educational Laboratory (AEL)
P. O. Box 1348
1031 Quarrier Street
Charleston, West Virginia 25325

Region: West Virginia, parts of Ohio, Pennsylvania, Virginia, Tennessee and Kentucky

This lab is developing a model education cooperative for rurally isolated schools through the application of a variety of communications media.

b. Center for Urban Education (CUE)
105 Madison Avenue
New York, New York 10016

Region: Metropolitan New York and some neighboring cities

c. Central Midwestern Regional
Educational Laboratory (CEMREL)
19646 St. Charles Rock Road
St. Ann, Missouri 63074

Region: Eastern Missouri, southern Illinois, central and western Tennessee, and Kentucky

d. Far West Laboratory for Educational Research and Development (FWLERD)
1 Garden Circle
Hotel Claremont
Berkeley, California 94705

Region: Northern California, Utah, and Nevada (with the exception of Clark County)

e. Northwest Regional Educational Laboratory (NWREL)
400 Lindsay Building
710 Southwest Second Avenue
Portland, Oregon 97204

Region: Alaska, Idaho, Montana, Washington, and Oregon

f. Regional Educational Laboratory for the Carolinas and Virginia (RELCV)
411 West Chapel Hill Street
Mutual Plaza
Durham, North Carolina 27701

Region: North Carolina, South Carolina, and southern Virginia

g. Research for Better Schools, Inc. (RBS)
1700 Market Street, Suite 1700
Philadelphia, Pennsylvania 19103

Region: Delaware, New Jersey, and eastern Pennsylvania

h. Southwest Educational Development Laboratory (SEDL)
800 Brazos Street
Austin, Texas 78701

Region: Texas and Louisiana

i. Southwestern Cooperative Educational Laboratory (SWCEL)
117 Richmond Drive, N. E.
Albuquerque, New Mexico 87106

Region: Portions of Arizona, Oklahoma, Texas, and all of New Mexico

j. Southwest Regional Laboratory for Educational Research and Development (SWRL)
11300 LaCienega Blvd.
Inglewood, California 90304

Region: Southern California, southern Nevada, and western Arizona

2. IDEA (Institute for the Development of Educational Activities, Inc.)

IDEA is an affiliate of the Charles F. Kettering Foundation. Information about IDEA and its specialized programs can be obtained by contacting:

IDEA
Suite 300, 5335 Far Hills Avenue
Dayton, Ohio 45492

Innovative Programs Division
IDEA
Suite 300, 5335 Far Hills Ave.
Dayton, Ohio 45429

Research and Development Division
IDEA
Suite 950, 1100 Glendon Ave.
Los Angeles, California 90024

Information and Services Division
IDEA
Box 446
Melbourne, Florida 32901

3. AED (Academy for Educational Development)

437 Madison Avenue
New York, New York 10022

Embassy Building
1424 Sixteenth St., N.W.
Washington, D.C. 20036

505 Symes Bldg.
820 Sixteenth Street
Denver, Colorado 80202

4. IRS (Information Retrieval System)

Wisconsin Department of Public Instruction
126 Langdon Street
Madison, Wisconsin 53702

IRS provides a collection and dissemination bank on current practices and programs in education, giving access to information about projects and programs in school districts, publications, and current research.

5. National Referral Center for Science and Technology

Library of Congress
First and Independence Avenues, S.E.
Washington, D. C. 20540

This national center functions as an intermediary, directing those who have questions about specific areas to individuals or organizations with expertise and specialized knowledge of the particular subject or area. Services are available without charge, by telephone, correspondence, or personal visit.

6. National Center for Educational Statistics

400 Maryland Avenue, S.W.
Room 1077A
Washington, D. C.

This center will answer inquiries on most aspects of education that can be summarized in a statistical fashion. However, caution is exercised in releasing information about individual schools, school systems, etc.

7. Office of Information

U. S. Office of Education
400 Maryland Avenue, S.W.
Washington, D. C.

The Office of Information answers educational questions from the press and the public.

G. Academic Institutions

State universities and teachers' colleges often provide resource services for school systems in their region. The range of service provided varies greatly among the institutions, but one might explore the offerings of a local institution in terms of the following general areas:

1. Bureaus of School Services - information and consultants on specified topics.

2. Extension Services - inservice training through classes conducted in the local community.

3. Continuing Education - inservice training through on-campus courses and workshops.

4. Educational Research and Development - may be conducted in a department of education, but also in other academic departments or university-related research bureaus (R & D centers are all based in universities). The Directory of Individuals, Programs, and Agencies Engaged in the Study of Change lists many of these university-based research centers.

5. Consulting Services - may be organized with the staff of the department of education or education-related research bureaus.

6. R & D (Research and Development) Centers

   Each research and development center concentrates on a significant problem area in education and conducts activities ranging from basic research through dissemination. The centers are interdisciplinary in organization and maintain cooperative relationships with regional laboratories, state departments of education, local school systems, universities and teacher training colleges, and relevant professional and non-profit organizations.

   The following list is from the Directory of Individuals, Programs, and Agencies Engaged in the Study of Change.

   a. Center for the Advanced Study of
   Educational Administration
   Institute for Community Studies
   1478 Hendricks Hall
   University of Oregon
   Eugene, Oregon 97403

   b. Center for the Study of Evaluation
   Graduate School of Education
   144 Hilgard Avenue
   Los Angeles, California 90024

   c. Center for Research and Leadership Development
   in Vocational and Technical Education
   1900 Kenny Road
   Ohio State University
   Columbus, Ohio 43210

   d. Center for Research, Development and
   Training in Occupational Education
   North Carolina State University
   Raleigh, North Carolina 27607

e. Center for Research and Development in
Higher Education
University of California
4606 Tolmen Hall
Berkeley, California 94720

f. Center for the Study of Social Organization of
Schools and the Learning Process
The Johns Hopkins University
3505 North Charles Street
Baltimore, Maryland 21218

g. Learning Research and Development Center
208 Mineral Industries Building
University of Pittsburgh
Pittsburgh, Pennsylvania 15213

h. National Coordination Center
The National Laboratory on
Early Childhood Education
805 West Pennsylvania Avenue
University of Illinois
Urbana, Illinois 61801

i. Research and Development Center in
Educational Stimulation
Fain Hall
University of Georgia
Athens, Georgia 30602

j. Stanford Center for Research and
Development in Teaching
Stanford University
770 Welch Road
Palo Alto, California 94304

k. Research and Development Center
in Teacher Education
University Junior High School Building
University of Texas
Austin, Texas 78712

l. Wisconsin Research and Development Center
for Cognitive Learning
The University of Wisconsin
1404 Regent Street
Madison, Wisconsin 53706

7. Educational Policy Research Centers

a. Stanford
Research Institute
Menlo Park, California 94025

b. The Policy Institute
Syracuse University Research
Corporation (SURC)
723 University Avenue
Syracuse, New York 13210

(1) Educational Policy Research Center
at Syracuse (EPRC)
Syracuse University Research Corporation
1206 Harrison Street
Syracuse, New York 13210

H. Human Resources

People can be very valuable to the resource retriever. They can serve directly, as sources of information, and also as effective guides to other sources of information. The use of "people" resources can help avoid problems resulting from the arbitrariness in the selection and categorization of information in "non-human" resources (libraries, hardbound collections, information services, etc.). The unique contributions that people can provide are their ad hoc evaluations of the probable adaptability of an innovation to the particular needs of the client and the quick referral they can give to other resources. They can be found both inside and outside of the client system, through a phone call, a special visit, a convention or meeting, or through serendipitous means.

I. Government Agencies

1. State Government

The departments of education or of public instruction in the various states provide consultants for their school systems on most topics of pertinence to the educational practitioner, e.g., curriculum, special services, federal programs, and administration. The state departments can also serve as clearinghouses on the progress of educational innovations in systems throughout the state. Research coordinating units and curriculum laboratories are normally in this category.

2. Federal Government

The contributions of the federal government to the development and diffusion of education information are substantial as reflected by involvement in many of the "source" agencies listed. The United States Office of Education, as a result of the provisions of the National Defense Education Act, the Elementary and Secondary Education Act, and the Vocational Education Act, is involved in a vast number of programs - many of them innovative - on an operational level. It also sponsors a great deal or research in education and can provide information about or access to relevant projects, completed or ongoing. The numerous publications of the Office of Education and other agencies are only one means of gaining access to this vast information source. Most federal agencies have information services of their own; e.g., the Defense Department's Defense Documentation Center; HEW's Children's Bureau; Office of Research and Development, Manpower Administration at 1111 20th St., N.W., Washington, D.C. 20210; National Referral Center at the Science and Technology Division of the Library of Congress, Washington, D. C. 20540; and the National Technical Information Service, Operations Div., 5285 Port Royal Road, Springfield, Virginia 22151. Probably no other federal department has as much training materials as the Department of Defense.

J. Professional Organizations

Most professional organizations publish newsletters, conference proceedings, documents, and journals containing educational information. The validity and concreteness of such information varies and it may be difficult to obtain, especially if one is not a member of the organization. A good technique is to get on their mailing list for newsletters, which announce recent or impending publications. Libraries and information services also collect certain kinds of publications from these organizations (usually their journal).

1. American Educational Research Association (AERA)

AERA
1126 Sixteenth Street, N.W.
Washington, D. C. 20036

2. National Education Association (NEA)

NEA Records Division
1201 Sixteenth Street, N.W.
Washington, D. C. 20036

3. American Vocational Association (AVA)

AVA
1510 H Street, N. W.
Washington, D. C. 20005

AVA also has a number of affiliated organizations, such as:

American Vocational Education Research Association
American Association for Vocational Instructional Materials, etc.

K. Other School Systems

Often valuable help can be given by other school systems. Because of their personal experience, other teachers and administrators can be the best sources of information about the practicability of an innovation.

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CURRICULUM VALIDATION

VALIDATION OF CURRICULUM IN VOCATIONAL-TECHNICAL EDUCATION

by
James E. Wall*

INTRODUCTION

This paper looks at validation as one of the many aspects of the comprehensive and complex process of curriculum development in vocational and technical education. Validation is referred to here as an aspect of the curriculum development process as opposed to its being a step in the process. The reason for this is that validation measures are taken in more than one of the steps in the process. Also, validation measures are taken for more than one reason. Hence, validation as a concept is rather pervasive. Lee J. Cronbach suggests that validation is more than the process of examining the accuracy of a specific prediction or inference from a test score; validation means to demonstrate the worth of; to validate is to investigate.

Validation may be viewed as the "mortar" that holds together the "bricks" of curriculum development. It is the "check-and-balance" dimension of any instructional system. Validation is important to both job/task analysis and to deriving behavioral-performance objectives. Certain types of validation measures are taken during design and tryout of materials, during the conduct of training after implementation, at the end of a training action, and even on the job after the trained individual enters work.

In the broadest sense, validation is almost synonomous with "evaluation" and "accountability." Validation as used in this paper is directly related to individual evaluation, formative evaluation, and summative evaluation. Distinctions between these three are as follows:

Individual evaluation is the monitoring of the performance of each learner as a basis for making decisions about his further vertical progression in a particular sequence, or his transfer laterally to other sequences. This is usually done by frequent monitoring of learner performance.

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Formative evaluation is conducted during the experimental period and provides feedback for improvement of the instructional package. Formative evaluation is the collection of appropriate evidence during the construction of a new curriculum in such a way that revisions of the curriculum can be made on evidence. It is ongoing and is carried out concurrently with the instruction. It is distinct from individual evaluation in that the focus is on the instructional system itself rather than the learner. It seems then that "validation" is "formative evaluation." Formative tests have two purposes: (1) to find out how much students have learned in a restricted area of content, and (2) to assess whether instruction has been properly designed and conducted. Design as used here refers to appropriate content, sequence, and method of instruction.

Summative evaluation is the overall assessment of a final instructional package. Summative evaluation is the collection of data at the end of a training program to determine its effectiveness. It does not occur during the design, but rather subsequent to development, refinement, and implementation.

The primary purpose behind conducting validation procedures is to determine if the planned curriculum will achieve the responses for which it was designed. Validation searches for evidence to indicate that the curriculum can cause individuals to achieve its predetermined behavioral objectives. Validation measures should, for the most part, show that when objectives are not achieved, the fault lies with the instructional system, not with the student.

Without validation measures being applied, curriculum design is greatly handicapped. The curriculum designer usually uses only subjective and/or personal judgment in job/task analysis, formulation of behavioral objectives, and even in the construction of a criterion test. Indeeed, in the early stages of instructional design, personal opinions and judgments of experienced persons as to what ought to be included in a course are valuable and necessary at the outset. However, observation, intuition, interviews, expertise, and historical precedent serve to support the designer just so long. They can serve to set early patterns for the designer. The instructional systems concept, on the other hand, demands empirical evidence that is derived through objective evaluation of content before further course design takes place. The criterion test is constructed to objectively validate course content, but its items must be validated before it can be so used.

Historically speaking, the judgment of the instructor many years ago was regarded as a criterion. Many instructors continue to rely on personal judgment as the criterion for constructing test items, and claim that when completed, they have an "obviously valid test." The "obviously valid test" cannot be validated by correlating it with something else. However, it can be improved by applying the factor analysis technique to criterion variables.

The writer of this paper does not wish to convey the idea that all curriculum designers should become "empiricists." Neither should we go in the other direction and become total "impressionists." The empiricist validates in a completely objective, formal manner. He insists on having numerical scores, no matter how crude his instrument, to be interpreted within minimal errors of measurement, and with predictions having indexes showing how likely it is to come true. The impressionist, on the other hand, bases his analyses on observations and informal measures and estimates. He intuitively compares impressions based on one procedure with impressions gained from another. He can be classified as being somewhat more casual in his validation efforts.

Validation in vocational-technical curriculum design requires the designer to be somewhere on the continuum between the empiricist on the one hand and the impressionist on the other. He should be intermediate between obsession with scores and unrestrained use of intuition. Formal objective procedures should be combined with informal judgment in all validation efforts.

ASSUMPTIONS

For purposes of this paper, several assumptions should be made before proceeding with further discussion about validation. These are stated here to get us on common ground so that we might begin thinking along similar lines.

First, the assumption should be made that the curriculum designer has decided to utilize some type of systems approach or model in the development of his curriculum and its components. Leonard C. Silvern defines a system as: "the structure or organization of an orderly whole, clearly showing the interrelationship of the parts to each other and to the whole itself." Curriculum development involves a step-by-step process, and a system best accommodates a process, or cycled steps. The use of a systems approach implies comprehensiveness of steps, as well as interdependence of stages, components, and concepts. Systems analysis techniques enable the designer to better select the stage (time sequence) of the program operation he must validate, i.e., to identify the relevant curriculum components with the outcome changes being measured.

The use of a systems approach assures that all the necessary assessments will be made. For example, some measure should be made of student performance or entering behavior before (pre-assessment) he begins a new curriculum. Similarly, two types of assessment should be continually made while the student is undergoing training (during-instruction). One of these types of assessment serves as feedback for reinforcement, the other assures acquisition of behaviors that are prerequisite to lateral movement to other experiences. Likewise, two types of assessments should be made after completion of a lesson or a unit (post-assessment). One aids in determining if a student is prepared for vertical progression to related or advanced experiences; the other serves as a type of summative evaluation, as well as a predictor of success on the job or in more advanced courses.

Constant improvement of curriculum is a worthy goal. Hence, the influence and use of pre-assessment is an important variable for validation since it is not the terminal criterion behavior along which dictates required instructional manipulation, but the differences between entering and terminal behavior.

Apparently there are as many systems models as there are curriculum designers. However, most all of them have some common features. These commonalities usually resemble the following:

1. job specification or analysis,
2. specification of objectives,
3. development of preliminary system design,
4. development--test--revise cycle applied to the system,
5. implementation and field testing the system,
6. follow-up and/or summative evaluation.

Included in the appendices are some excellent examples of models that persons have prepared to graphically depict curriculum development processes. Note the similarities. Some are specific concerning validation measures; some are not. It should be made explicit here that no one model fits all situations. Models are necessarily going to be different for secondary programs, for post-secondary programs, for industry-based programs, for government agency-based training, for military-based training, etc. Hence, it behooves the curriculum designer to become knowledgeable in principles of systems development if he is to achieve assurances that his curriculum will be valid. One of these models will be used later in this paper in an attempt to show where various validation measures will be taken, and to show how scores taken at one point in the system are correlated with those taken at another.

There are other "stage-setting" assumptions which need to be made at this point in the paper. A second major assumption is that the curriculum designer has selectively applied a number of principles of learning, because different kinds of learning require different sets of conditions. The important factors which influence learning are: motivation, organization, participation, confirmation, repetition, and application. One type of learning may require emphasis on one factor, whereas another type of learning may require two or more factors in concert.

A third assumption is that the designer intends to build the curriculum so that the sequence of learning progresses from the simple to the complex. The sequence or hierarchy should resemble the following: specific responses and associations which are prerequisite to verbal and motor chains which are prerequisite to discriminations which are prerequisite to concepts which are prerequisite to principles which are prerequisite to higher-order principles or strategies for problem-solving.

Fourth, it is assumed that enabling or interim objectives for lessons, modules, or units have been appropriately derived, and are of a degree of specificity such that the materials can be validated accordingly. Likewise, it is assumed that terminal (course or training program) objectives also have been appropriately stated in such a manner that validation measures also contribute to overall or summative evaluation and accountability in programs and projects. One striking advantage of precisely stated objectives is that when one is completely clear about the nature of the terminal behavior, it is possible to arrange for appropriate practice opportunities during the instructional sequence.

A fifth assumption is that we can at least tentatively agree that the essence of education focuses on preparing persons so they might be enabled to attack all their problems by bringing knowledge and action to bear on them in a unified and integrated rather in a fragmented manner. Does the student who finishes your curriculum merely possess a large bewildering body of unrelated facts? Or, can he articulate knowledge and skills learned so that he can perform? Validation through the use of criterion referenced tests assures performance.

Such all-encompassing assumptions may be misleading. They may cause some people to feel that further discussion of validation is unnecessary since so much has been "assumed." This is not the case because these assumptions touch only a small portion of the elements of the entire instructional system.

Validation involves measurement. Appropriate validation measures do not allow wide fluctuation in attainment of objectives, nor do they bring about perfect stability. Validation does aid in better control of achievement of objectives. When combined with appropriate definitions of behavior changes sought, validation provides the curriculum designer with a thermostat to assure the achievement of the instructional objectives. Hence, the curriculum designer "controls" the growth or behavior change of the student. The designer usually starts with a comprehensive description of the desired dependent set of events, i.e., a finished product or process derived by job/task analysis. Then he works backward through his analysis to the set of independent events most likely to produce the product or process.

Validation procedures have value in many of the stages of the system. However, their greatest value probably occurs when employed in the design stages of materials development, in which they are applied to both interim as well as terminal objectives. Hence, validation becomes the prime focus in checking out the objectives and the criterion tests, as well as later in pilot tests and field trial assessments of materials. However, after validation is completed during design-development and the training is installed in the classroom, testing for attainment of enabling or interim objectives may become a matter of self-testing by the student. Formal testing for attainment of terminal objectives is conducted by the instructor and these scores might be used to further validate the curriculum.

In the design stage the curriculum developer may wish to use a simple cycle such as: design -- test -- revise -- retest. The use of this cycle tends to upgrade the effectiveness of the instructional materials through repeated revision. Most of the models shown in this paper contain some type of design -- test -- revise -- retest dimension or component.

VALIDATION IN INSTRUCTIONAL SYSTEMS

Validation in the design of curriculum materials demands a systems approach which will ensure that testing is conducted at the right steps in the overall process. Some curriculum experts have designated these efforts with a generic term: "developmental validation."

For purposes of ordering our thinking about validating curriculums, we need to utilize a systems model which sequences the events that are necessary to produce a valid curriculum. The model recently reported by F. Coit Butler will serve this purpose.

Butler's system is briefly given as follows:

1. Conduct feasibility study -- This requires an analysis of trends with regard to job markets and occupational patterns; trends in economic, business, agricultural, and industrial expansion; types of jobs and worker

competencies needed; availability of training programs and facilities, and their costs; etc.

2. Conduct task analysis --- After the decision has been made that a specific training program or course is needed, an occupational or job analysis is conducted to determine skills and knowledges required; kinds and levels of performances demanded by the job, etc.

3. Develop training objectives --- At this point the designer must derive explicit statements about what a student, upon completion of the training program, must be able to do; the conditions and standards of his performance; etc. Both terminal (unit, course, program) objectives and interim or enabling (lesson, activity, module) objectives must be specified. These may be directly coupled to broad goal statements and possibly even broader educational or philosophical constructs.

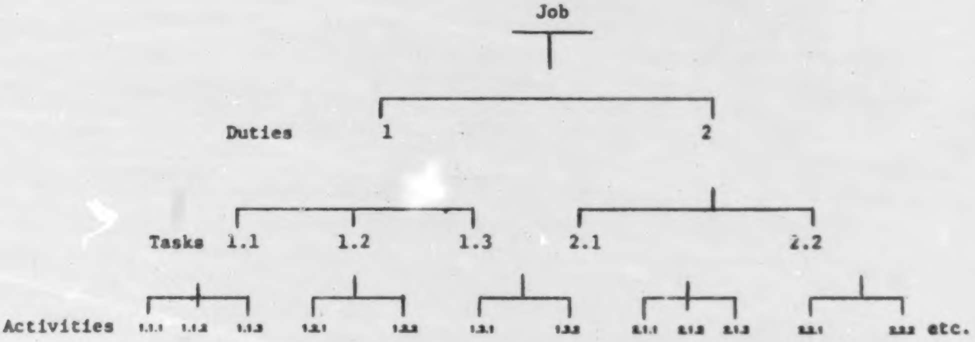
4. Develop criterion tests --- These are used in the early stages of design to determine validity of the objectives, and later to help perform summative evaluations of the entire course or training program. Additional information about criterion tests is included later in this paper.

5. Validate the criterion test --- This is done by administering the test to an untrained-unskilled group and to a trained-skilled group and correlating the scores to obtain validity and reliability coefficients. Test item analysis at this point calls for interpretations similar to the following: (a) if, for a given test item, the majority of untrained group responses are correct, the item has little or no validity or reliability; and conversely, (b) if, for a given test item, the majority of trained group responses are incorrect, the item likewise has little or no validity or reliability. Test measurement and statistics texts listed in the References section of this paper contain procedures for the test item analysis. This analysis is conducted to improve the test as a measuring instrument. This is the most important validation step in the process.

6. Validate training objectives --- The test should contain at least one item for each objective, and possibly not more than five items for each objective, otherwise the test becomes too long for practical purposes. Validating the test in Step 5 above and validating training objectives can be accomplished concurrently, provided the test item

itself is not at fault. Interpretations similar to those made in Step 5 are employed in this step; e.g., (1) if, for a given test item and its companion objective, the majority of untrained group responses are correct, there may be no need to include that objective in the curriculum; and, (2) if, for a given test item and its companion objective, the majority of trained group responses are incorrect, there may be no need to include that objective in the course because, apparently, the worker can perform on the job without that knowledge or skill. (These types of interpretations may need to be reviewed in light of some estimates concerning the possibilities and probabilities that a worker may be required to "transfer" skills and knowledges to a different work situation. However, if this becomes probable then the situation may warrant a new re-training or up-grading instructional program which calls for it to undergo the same validation procedures outlined here.) According to Butler's model, the initial design phase has been completed at this point, but the remaining phases also require validation considerations.

7. Develop learning sequence and structure --- This is done according to the duties, tasks, and activities provided in the job/task analysis. The following sketch shows a pyramidal form of learning structure and sequence.



Activities, tasks, and duties are structured (and learned) in both a vertical and horizontal sequence. The learning of one is dependent upon accomplishment of those which precede it. Most curriculum experts recognize that sequencing must be approached with a great deal of flexibility. The general guidelines of efficiency should influence sequencing.

Butler sets forth a matrix analysis technique for preparing the course outline in which supporting knowledges and skills for activities, tasks, and duties are listed. He indicates that the learning sequence can be plotted by starting with the terminal objective and working backward through each preceding prerequisite--in essence, from the complex back to the simple. Butler suggests listing all terms, concepts, rules, and principles which pertain to each objective. List them as single-fact statements and assign each a number. Each number is then placed in a two-dimensional matrix (discrimination-association) along a diagonal line from top left to bottom right. Associations then are marked in the common squares above the diagonal, and discriminations are marked in the common squares below the diagonal. By shuffling and reshuffling, a rearranged matrix can be plotted which depicts an optimum clustering of discriminations and associations around the diagonal, which results in the best sequencing. The clusters tend to depict broad concepts in the curriculum.

Validating the sequence also is accomplished with the criterion test which has been validated and revised. The test is given to a group (30 to 50) of trained individuals, i.e., as a post-test to persons who just completed the program, or to those who have been on the job about six months. In the analysis of these scores, one looks for the dependency and interdependency between and among units, lessons, or fairly large blocks of curriculum content.

Butler indicates that the test data should be analyzed with two basic questions in mind: (1) did the majority of those students who correctly performed a subordinate unit (Unit No. 1) also correctly perform the following and supposedly dependent unit (Unit No. 2)? And, (2) did the majority of those who correctly performed the higher unit (Unit No. 2) also perform the subordinate unit (Unit No. 1) correctly? If, for a tested trained sample, the answers to both questions are affirmative, then the sequence is valid. If, for only 85% of the sample, the answers are affirmative, then the sequence is probably valid. See "Validating Content Sequence" chart on the following page for implications when 50% or less of the trained sample perform incorrectly.

The foregoing procedure is used only on a pair of tasks in a hierarchy. Suppose the hierarchy consisted of three or more tasks and validation is still required. Recent research has gone in the direction of trying to discover such hierarchies and their properties, and

Validating Content Sequence

Summary of procedure for analyzing criterion test data from a sample trained population when validating content structure and sequence

Trained Sample (only correct performance)	Performance	Implications
Performs unit (100%)	85% perform sub-unit	Possible correct sequence
Performs sub-unit(100%)	85% perform unit	Possible correct sequence
		Taken together, a certainty the sequence is correct.
Performs unit (100%)	85% perform sub-unit	Possible correct sequence
Performs sub-unit(100%)	50% fail to perform unit	Possible incorrect sequence
		Taken together, indicates bad test item.
Performs unit (100%)	50% fail to perform sub-unit	Possible incorrect sequence
Performs sub-unit (100%)	85% perform unit	Possible correct sequence
		Taken together, indicates bad test item.
Performs unit (100%)	50% fail to perform sub-unit	Possible incorrect sequence
Performs sub-unit(100%)	50% fail to perform unit	Possible incorrect sequence
		Taken together, a certainty the sequence is incorrect.

Source: F. Coit Butler. Instructional Systems Development for Vocational and Technical Training, Educational Technology Publications, Englewood Cliffs, New Jersey, 1972.

validation procedures are under study, using factor analysis techniques. The curriculum designer may wish to refer to "A Method for Validating Sequential Instructional Hierarchies," by P. W. Airasian, in the December 1971, issue of Educational Technology Journal. This method is based on calculation of conditional item difficulty indices and facilitates the pinpointing of sequential levels within a hierarchy which require revision.

8. Develop learning strategies --- This step has no feasible validation procedures which are not too costly and time consuming to use. Media are selected according to those that will do an effective job for the least cost. Combinations of the different media usually should be considered.

Validation is influenced by the media. Test scores may be low for students with reading problems, but the same test scores may be improved by using audio media instead of printed media. The objectives and student learning styles are the prime determinants in developing the learning strategies.

9. Develop instructional units (lessons) --- This is the point where a test model of the instructional system is produced. Two documents are needed: (1) the system development plan, and (2) the instructor's manual or guide.

The system development plan contains: (1) task analysis summary forms; (2) validated objectives in validated sequence, supported by a summary of the validation data; (3) validated criterion test items in validated sequence, supported by a summary of the validation data; (4) outline of instructional strategies with associated content (objectives) identified; and (5) production and testing plans for the system.

The design and format of the individual learning units may vary greatly, but each should contain the following: (1) the performance objectives; (2) the knowledges and skills to be gained; (3) a list of tools, equipment, supplies, references, etc., needed for the unit; (4) a learning activity guide; (5) interim progress checks and student self-evaluations; and (6) an instrument to serve as a pre-test and/or a post-test for evaluations by the instructor.

10. Validate learning units --- At this point each unit is tested and revised until 85% of sample trainees reach the criterion.

Revision may require resequencing and adoption of new learning strategies. Initial testing is done on an individual or one-to-one basis, with two or three sample trainees who have upper-level ability. Minor revisions may be made at this point; however, if major revision is indicated, two or three more individual tryouts should be conducted.

Small-group tryout is then conducted on 6 to 10 students who represent the range of ability and background of the target population. Criterion test data are again used to locate trouble spots and revision is made. At this point, 85% of the students should be performing correctly on the criterion test.

Final tryout is made on a large group of 30 to 50 students under conditions which approximate actual training. This tryout is conducted by the curriculum designer along with the instructor(s). A group this size is needed to verify (or validate) previous design results. Final revision is made following this tryout.

11. Implement and field test the system --- This is done under actual classroom conditions. The instructor's role in the instructional system is explicated at this point, and the Instructor's Manual is developed. His role becomes that of manager and facilitator of learning. His tasks are as follows: (1) diagnose individual learning needs; (2) prescribe learning experiences; (3) provide proper materials and equipment at right time; (4) test and evaluate individual progress; (5) compile individual and group progress records; (6) provide tutorial and counseling help; (7) provide motivational reinforcement; (8) provide supplementary materials and experiences; (9) coordinate individual, small-group, and large-group learning activities; (10) coordinate use of learning materials and equipment; and (11) evaluate feedback data on effectiveness of learning.

The Instructor's Manual should contain: (1) course description; (2) student population description; (3) performance objectives; (4) criterion tests; (5) system performance data; and (6) suggestions for administering the system.

Field testing is the final phase of the systems development process. This means the program is monitored, evaluated, and subsequently revised continuously for as long as it is in use. This phase may be more appropriately referred to as system "institutionalization." Constant monitoring and analysis of criterion test data will continue to point the way for needed revision.

Butler points out that a training system is never "finished," rather, it is constantly "in process."

12. Follow-up graduates --- At this point, effective guidance and placement are brought into play. Longitudinal planning for follow-up at 1-year, 3-year, 5-year, or 10-year intervals may be started at this point. Follow-up to obtain details of occupational patterns, changes in needed competencies, job adjustment problems, and work satisfaction indices, all can be used to improve the instructional system.

CRITERION-REFERENCED TESTS

Much has been said in the foregoing material about criterion tests, or criterion-referenced tests (CRT). The CRT is central to all validation efforts.

In curriculum development we are concerned with criterion-referenced tests, whereas, in traditional test development, the concern has been and still is with norm-referenced tests (NRT). A simple distinction should be made here between the CRT and the NRT.

The NRT is the more traditional type of test and is used to identify an individual's performance in relation to the performance of others on the same measure. Hence, the NRT is viewed as a relative measure. The CRT, on the other hand, is used to identify an individual's status with respect to an established standard, or criterion, of performance. The CRT, therefore, is viewed as an absolute measure. Curriculum developers are concerned with getting an individual person trained proficiently according to a predetermined set of absolute criteria, rather than training him relative to the performance of other individuals.

CRTs can be devised for use in making decisions both about individuals and instructional programs. Concerning decisions about individuals, one might use a CRT to determine whether a student had mastered a criterion skill that is prerequisite to starting a new training program, or a new sequence within a program. Concerning instructional programs, a CRT could be designed that would reflect attainment of objectives based on a hierarchial sequence. The CRT could be administered to learners after they completed the sequence, and, after analysis, the efficacy of the sequence might be determined.

The CRT and Reliability --- Validity of the curriculum generally, and of the CRT specifically, cannot be considered apart from reliability. This implies that the CRT must be internally consistent, i.e., CRT items must be similar to stated behavioral objectives in terms of what they are measuring. Although traditional statistical procedures for determining reliability coefficients are not necessarily appropriate for CRTs, it is thought at this time that coefficients which are derived by considering both a pre-instruction assessment and a post-instruction assessment as part of the same extended phenomenon might yield more meaningful reliability estimates.

An ideal curriculum component, package, program, unit, lesson, etc., should result in perfect learning on the part of all individuals. While individuals may differ in the amount of time required to go through a curriculum component, once they have completed it, all should have mastered the content. From this point of view a good program should result in little variability for a measure of learning. One might suppose, then, that variability of G scores (gain between pre-test and post-test) would be a criterion that could be used in assessing programs such that the less the variability, the better the curriculum component. (It should be recalled by the reader that correlation coefficients derived by traditional statistical methods rely on variability.)

The above is merely mentioned here in the event the curriculum designer has the time and inclination to work toward impirical reliability estimates.

In the initial design stages, the designer takes the objectives and recasts them as items on the CRT. If the objectives have been derived from accurate job analyses, then they should have job validity, and consequently, test items geared to these objectives also should have true validity. Reliability of the CRT will depend upon job-objective-test behavior that is observable and measurable. To improve test reliability, a preliminary check can be made on two different groups of 30 to 50 persons: (1) untrained-unskilled persons, who might be entering students, and (2) trained-skilled persons who might have been on the job for less than six months. (This procedure was outlined in one of the steps in Butler's model.) Comparisons of scores of the two groups will yield a correlation coefficient of reliability. The reliability check may require major revision of the entire test, but each item should be treated separately, since a composite test reliability coefficient will not pinpoint the specific items that need revision, whereas an item-by-item analysis will.

In the case where a curriculum is being developed for a new or emerging job or career, non-availability of trained-skilled persons for purposes of determining an in-design system reliability estimate would prevent the use of the above approach. On the other hand, for those ongoing curriculums that are being subjected to continuous revision and study, the above approach to determining reliability would seem to be a tenable one. This technique is suggested for consideration despite the fact that it may be time consuming and somewhat costly. At the risk of sounding trite, the curriculum designer is reminded that funds and time expended early in the blueprint or design stages may result in larger savings later on as training takes place.

The CRT and Validity --- Procedures used in assessing the validity of the CRT suffer similar difficulties found in assessing reliability. Validity of NRTs is based on correlations, hence on variability, the search being usually for coefficients that exceed +.60. However, CRT coefficients of less than +.60, and even those with negative coefficients, are not necessarily devastating. CRT items are validated primarily in terms of the adequacy with which they represent the criterion stated in the objective. Adequacy of content is especially important for tests that measure outcomes of education or training. Hence, content validity approaches may have some application to CRT test validation. In content validity we determine skills, knowledge, and understanding that comprise the correct behavior we are seeking in students, then translate these to objectives and construct a test or tests to measure attainment or achievement. Finally, we match the analysis of test content against the analysis of instructional program content and objectives and see how well the former represents the latter. To the extent that our objectives are represented in the test, the test is valid.

The major focus of validating the CRT is to show that its items are a representative sample of all aspects and facets of the behavior prescribed in the objective. This means there may be pencil-paper items pertaining to skills and knowledges. It also means that there may be items which measure performance. Responses to pencil-paper tests are easier to obtain than responses to tests of performance. Performance tests usually call for responses that require all the dimensions of behavior, such as speed, accuracy, judgment, etc.

The CRT and Item Analysis --- Item analysis procedures have traditionally focused on pinpoint test items on NRTs that do not discriminate among persons who take the test. Faulty items would be those which are too easy, too hard, or ambiguous. Both positively and negatively discriminating items for CRTs may pinpoint areas of instruction which need revision. However, negatively discriminating items are the ones which should be identified, but identifying them will depend on the ease with which analyses can be conducted. This usually demands sophisticated data-processing techniques.

Webster and McLeod present an excellent technique for item analysis of a module test which can be used to perform item analyses on CRTs.

SUMMARY

The foregoing material has attempted to present a rationale for validating curriculums in vocational and technical education. A systems approach was used to present an orderly approach to validation discussions.

The curriculum designer may have concluded that validation efforts are extraordinarily time consuming and require test and measurement expertise not ordinarily found among curriculum staff members. Nevertheless, validation procedures as outlined in this paper proceed in an orderly fashion, building on each preceding step. The result is a curriculum package which can be identified as being sound and productive of persons who can perform.

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Kemp, Jerrold E. Instructional Design: A Plan for Unit and Course Development. Belmont, California: Fearon Publishers, 1971.

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Mager, Robert F. Goal Analysis. Belmont, California: Fearon Publishers, 1972.

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Thorndike, Robert L., and Hagen, Elizabeth. Measurement and Evaluation in Psychology and Education. 3rd ed. New York: John Wiley & Sons, Inc., 1969.

Warren, Malcolm W. Training for Results: A Systems Approach to the Development of Human Resources in Industry. Reading, Massachusetts: Addison-Wesley Publishing Company, 1969.

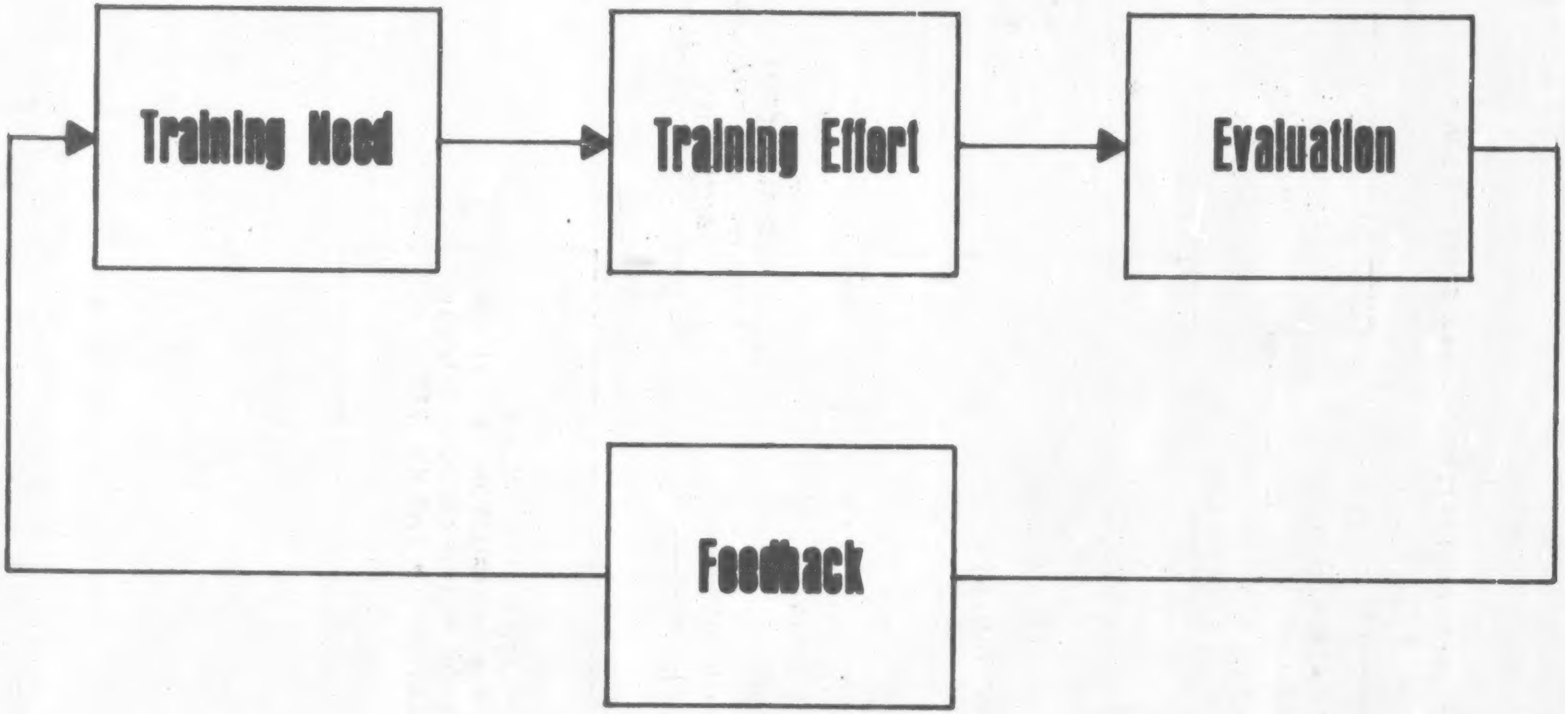
Webster, W. J., and McLeod, G. K. "An Empirical Approach to Curriculum Design." Education, XC (Feb.-Mar., 1970).

Wert, James E.; Neidt, Charles O.; and Ahmann, Stanley J. Statistical Methods in Educational and Psychological Research. New York: Appleton-Century-Crofts, Inc., 1954.

Yagi, Kan; Bailek, H. M.; Taylor, J. E.; and Garman, M. The Design and Evaluation of Vocational Technical Education Curricula Through Functional Job Analysis. Alexandria, Virginia: Human Resources Research Organization, 1971.

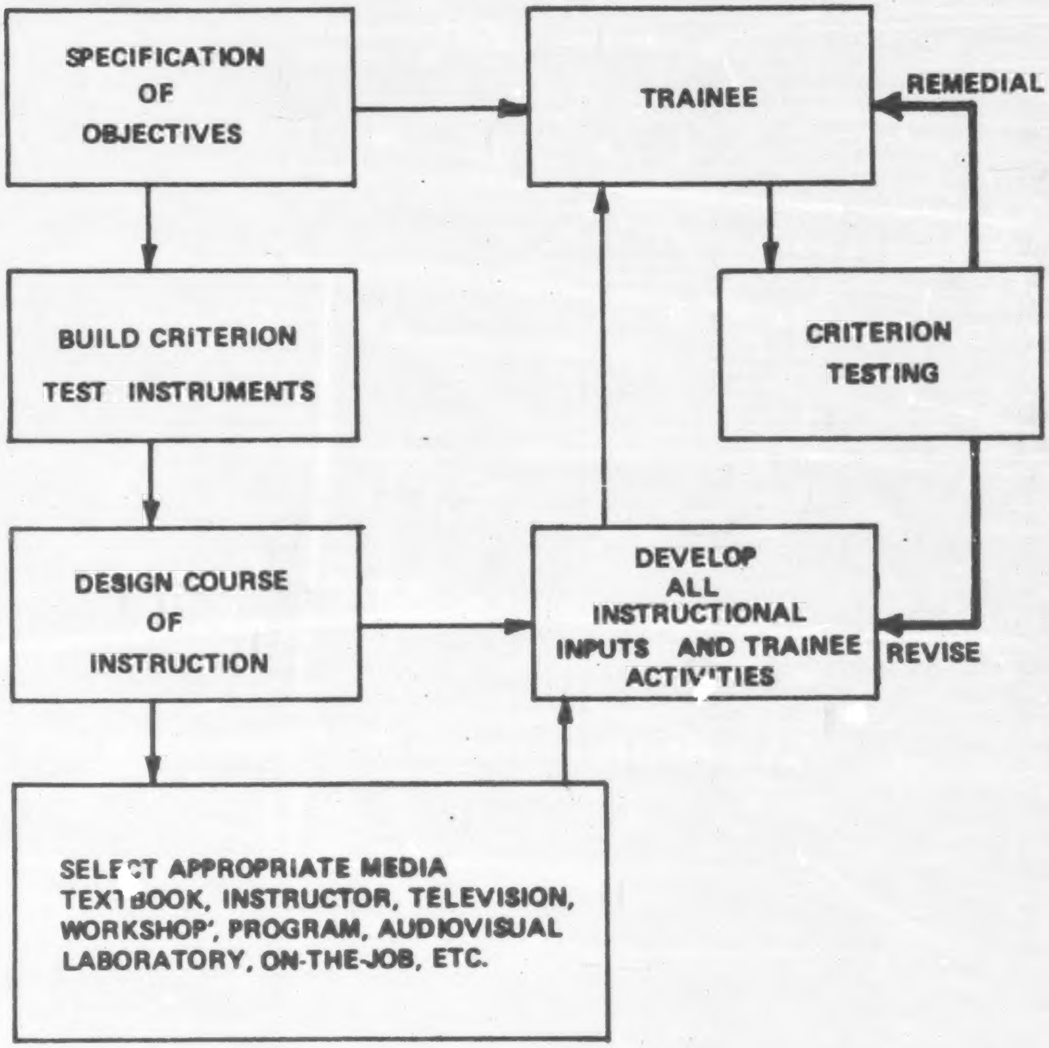
APPENDIX 2

CYBERNETIC SYSTEM FOR TRAINING

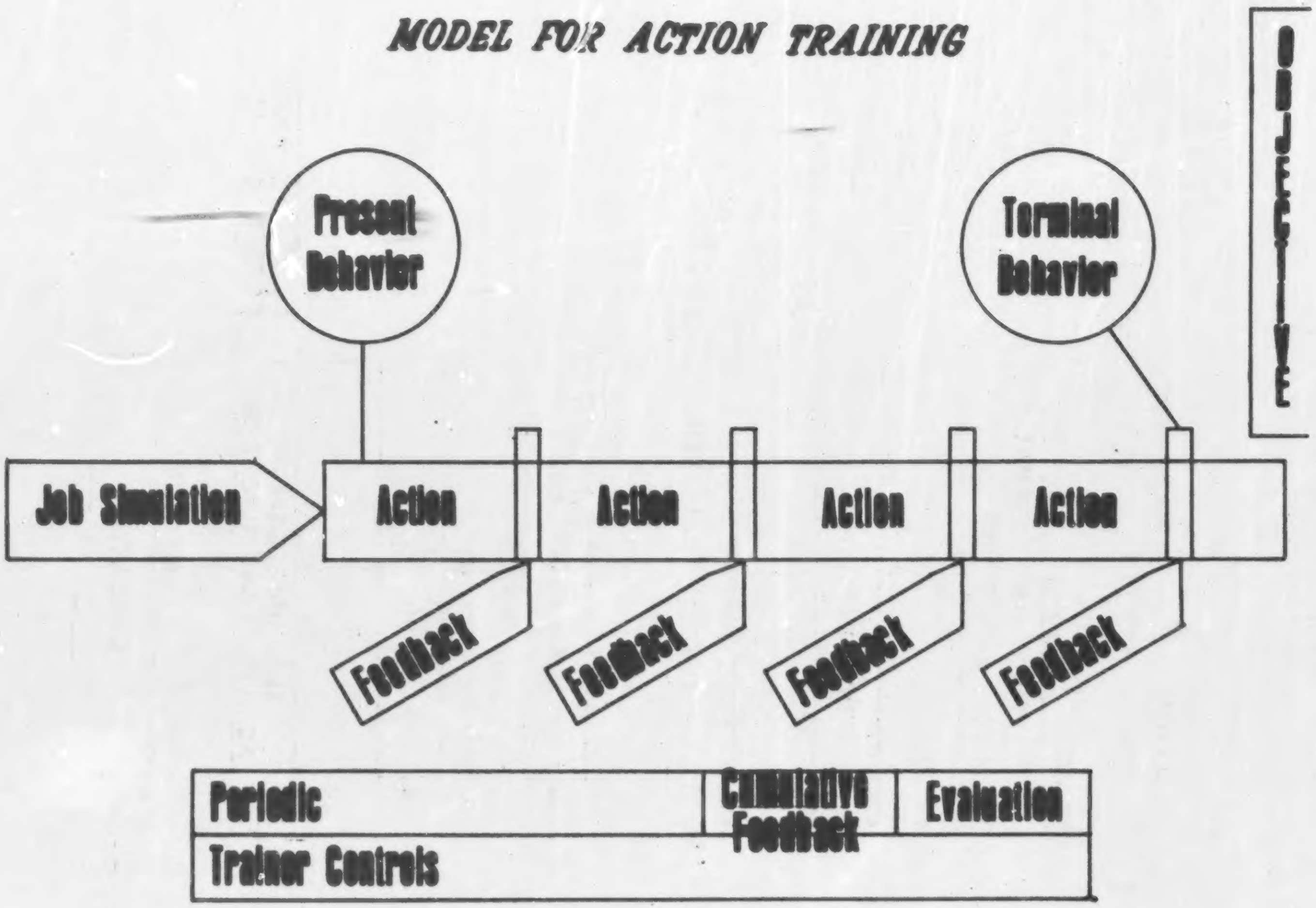

Training Need
Training Effort
Evaluation
Feedback

Odiorne, G.S. Training By Objectives, Macmillan Company, New York, 1970.

A SIMPLIFIED INSTRUCTIONAL SYSTEM DESIGN

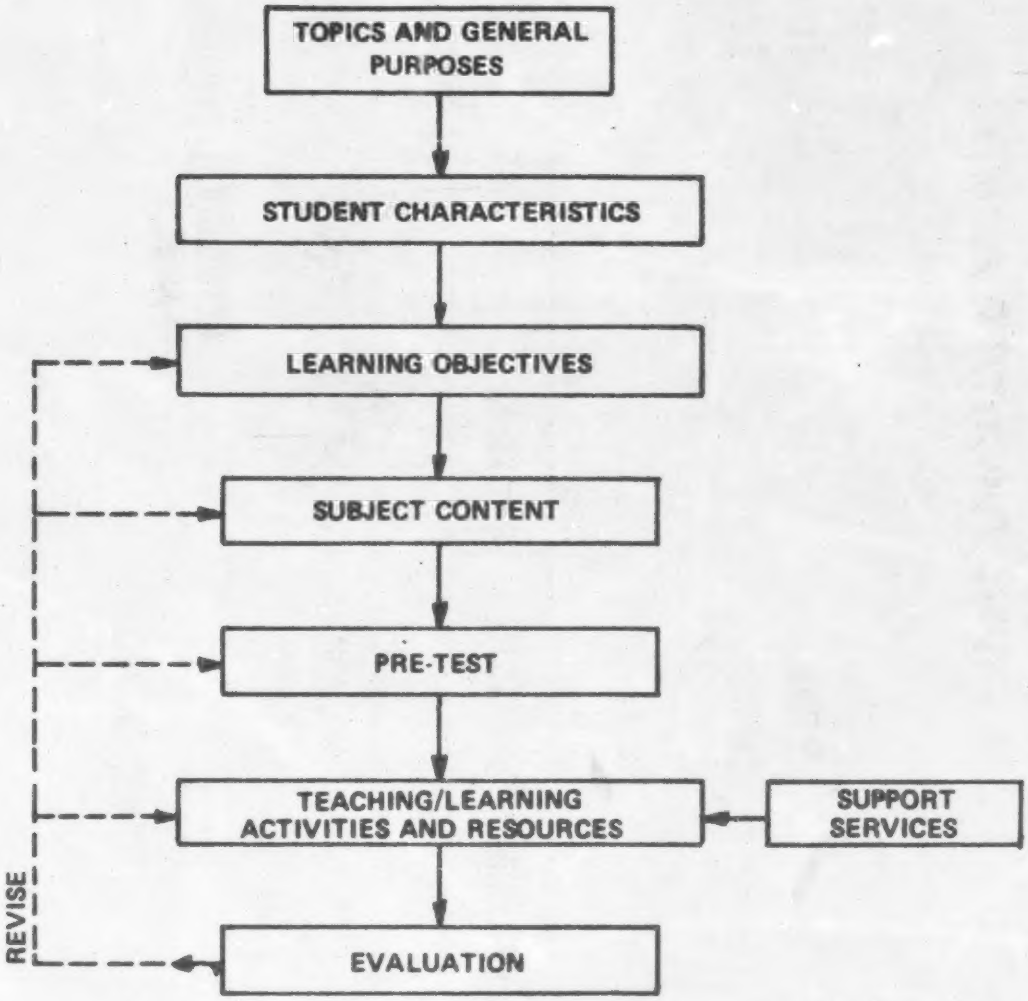

SPECIFICATION OF OBJECTIVES
TRAINEE
REMEDIAL
BUILD CRITERION TEST INSTRUMENTS
CRITERION TESTING
DESIGN COURSE OF INSTRUCTION
DEVELOP ALL INSTRUCTIONAL INPUTS AND TRAINEE ACTIVITIES
REVISE
SELECT APPROPRIATE MEDIA TEXTBOOK, INSTRUCTOR, TELEVISION, WORKSHOP, PROGRAM, AUDIOVISUAL LABORATORY, ON-THE-JOB, ETC.

MODEL FOR ACTION TRAINING


OBJECTIVE
Present Behavior
Terminal Behavior
Job Simulation
Action
Action
Action
Action
Feedback
Feedback
Feedback
Feedback
Periodic
Cumulative Feedback
Evaluation
Trainer Controls

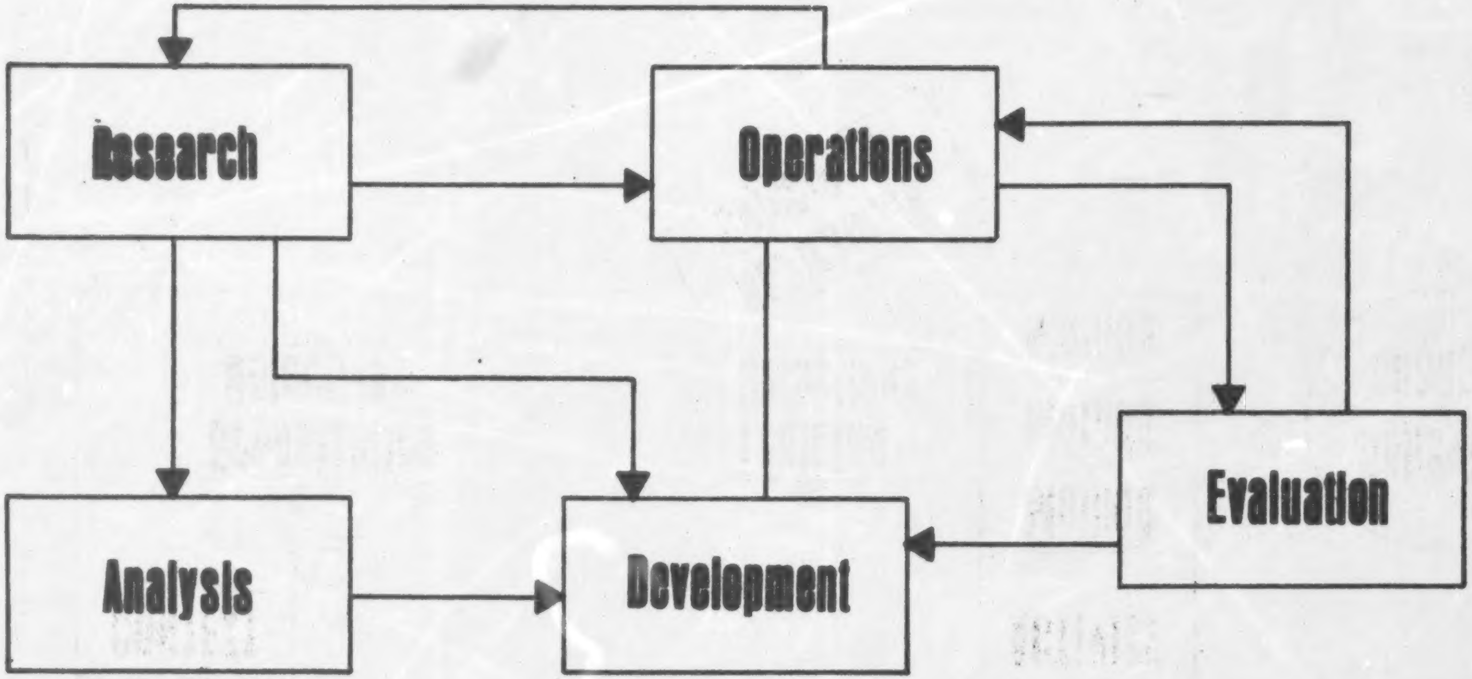
Odiorne, G.S. Training By Objectives, Macmillan Company, New York, 1970.

INSTRUCTIONAL DESIGN PLAN


TOPICS AND GENERAL PURPOSES
STUDENT CHARACTERISTICS
LEARNING OBJECTIVES
SUBJECT CONTENT
PRE-TEST
TEACHING/LEARNING ACTIVITIES AND RESOURCES
SUPPORT SERVICES
EVALUATION
REVISE

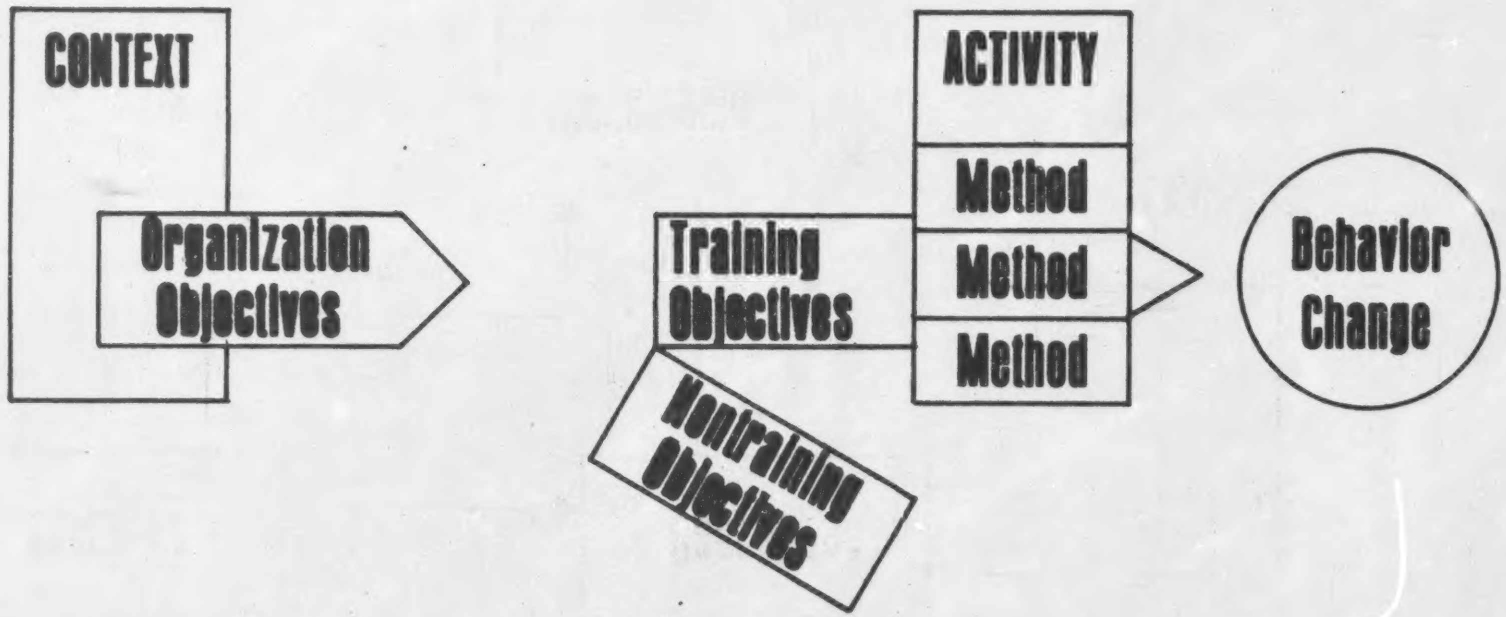
Kemp, Jerrold E. Instructional Design, Fearon Publishers, Belmont, Calf., 1971.

GENERAL MODEL of a TRAINING OPERATION

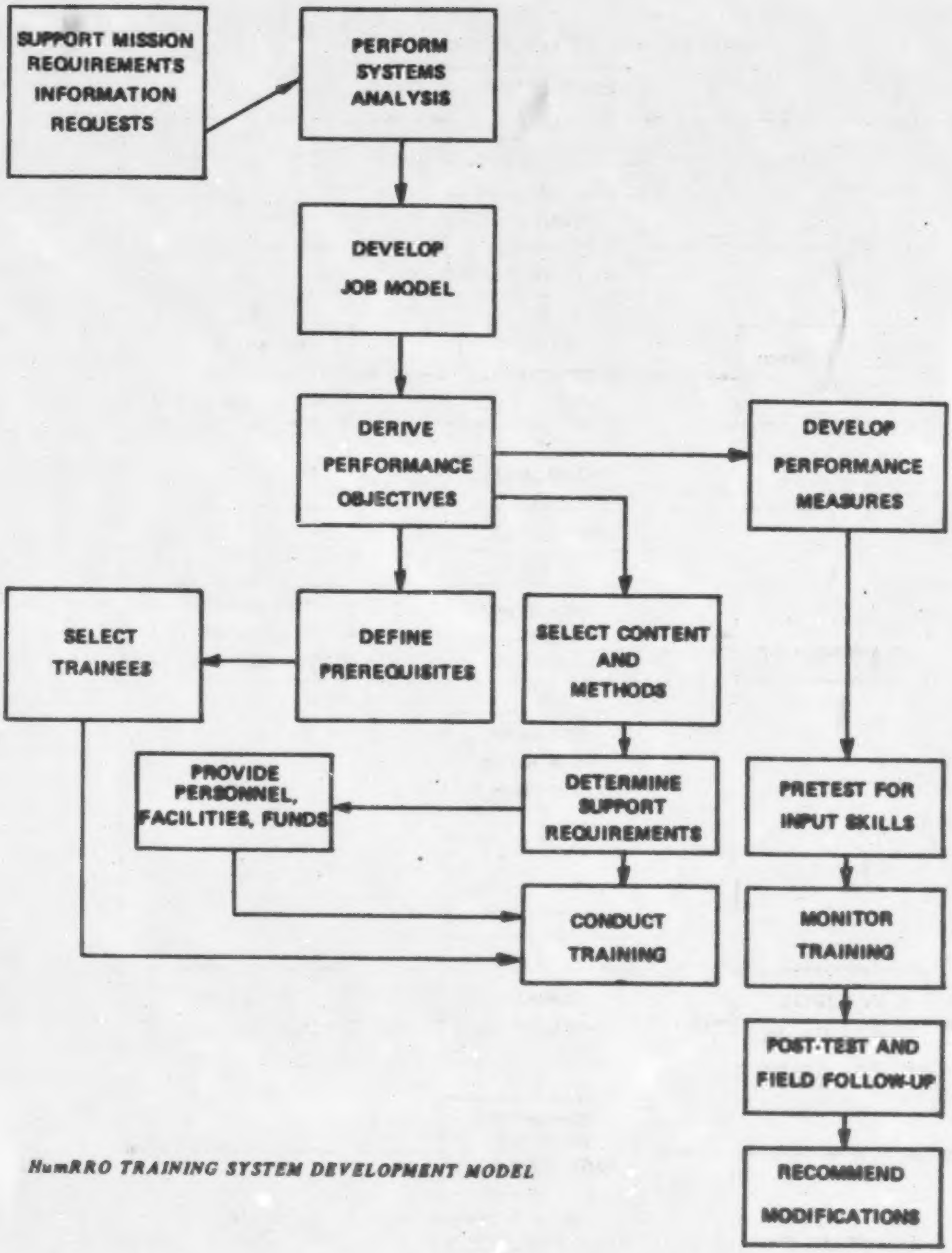

Research
Operations
Evaluation
Analysis
Development

Warren, M.W. Training for Results, Addison-Wesley Publishing Co., Reading, Mass., 1969.

A SYSTEMS MODEL for MANAGEMENT TRAINING

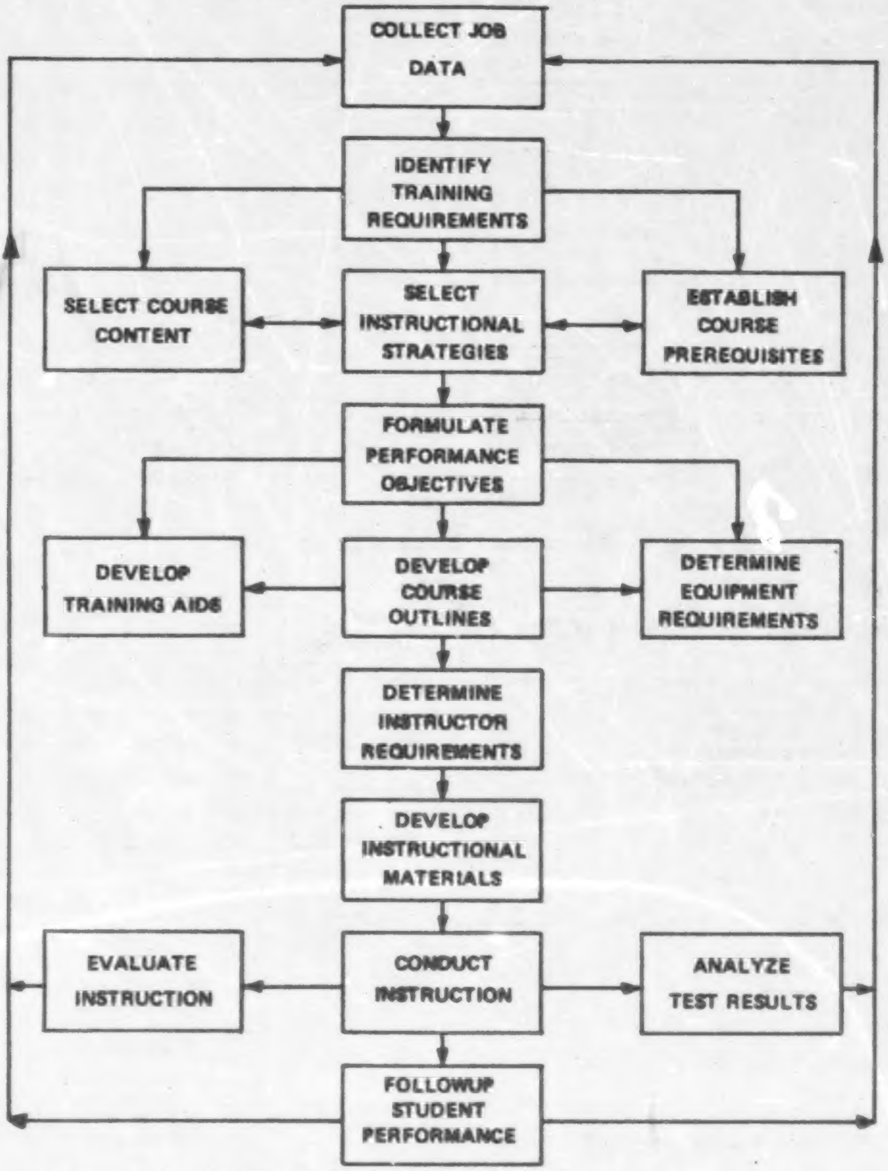

CONTEXT
Organization Objectives
Training Objectives
Nontraining Objectives
ACTIVITY
Method
Method
Method
Behavior Change

Odiorne, G.S. Training By Objectives, Macmillan Company, New York, 1970.


SUPPORT MISSION REQUIREMENTS INFORMATION REQUESTS
PERFORM SYSTEMS ANALYSIS
DEVELOP JOB MODEL
DERIVE PERFORMANCE OBJECTIVES
DEVELOP PERFORMANCE MEASURES
SELECT TRAINEES
DEFINE PREREQUISITES
SELECT CONTENT AND METHODS
PROVIDE PERSONNEL, FACILITIES, FUNDS
DETERMINE SUPPORT REQUIREMENTS
PRETEST FOR INPUT SKILLS
CONDUCT TRAINING
MONITOR TRAINING
POST-TEST AND FIELD FOLLOW-UP
RECOMMEND MODIFICATIONS

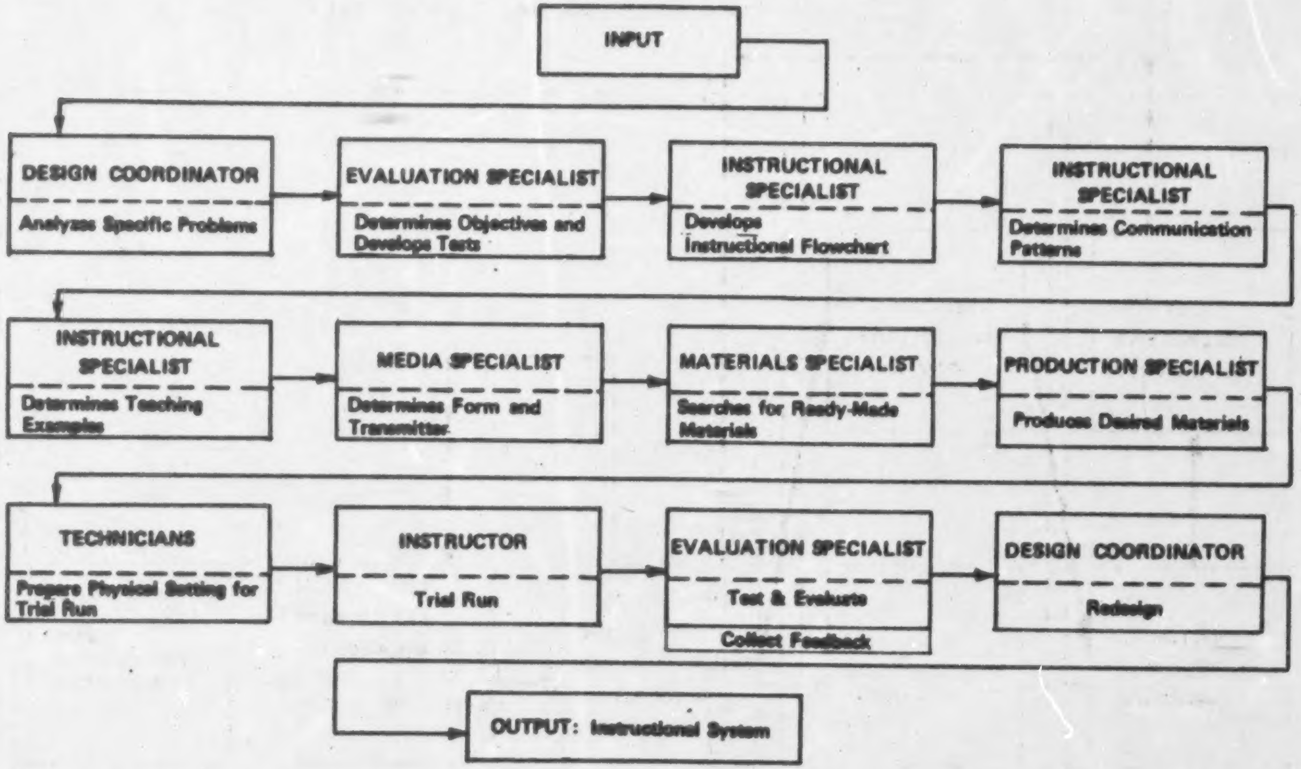
HumRRO TRAINING SYSTEM DEVELOPMENT MODEL

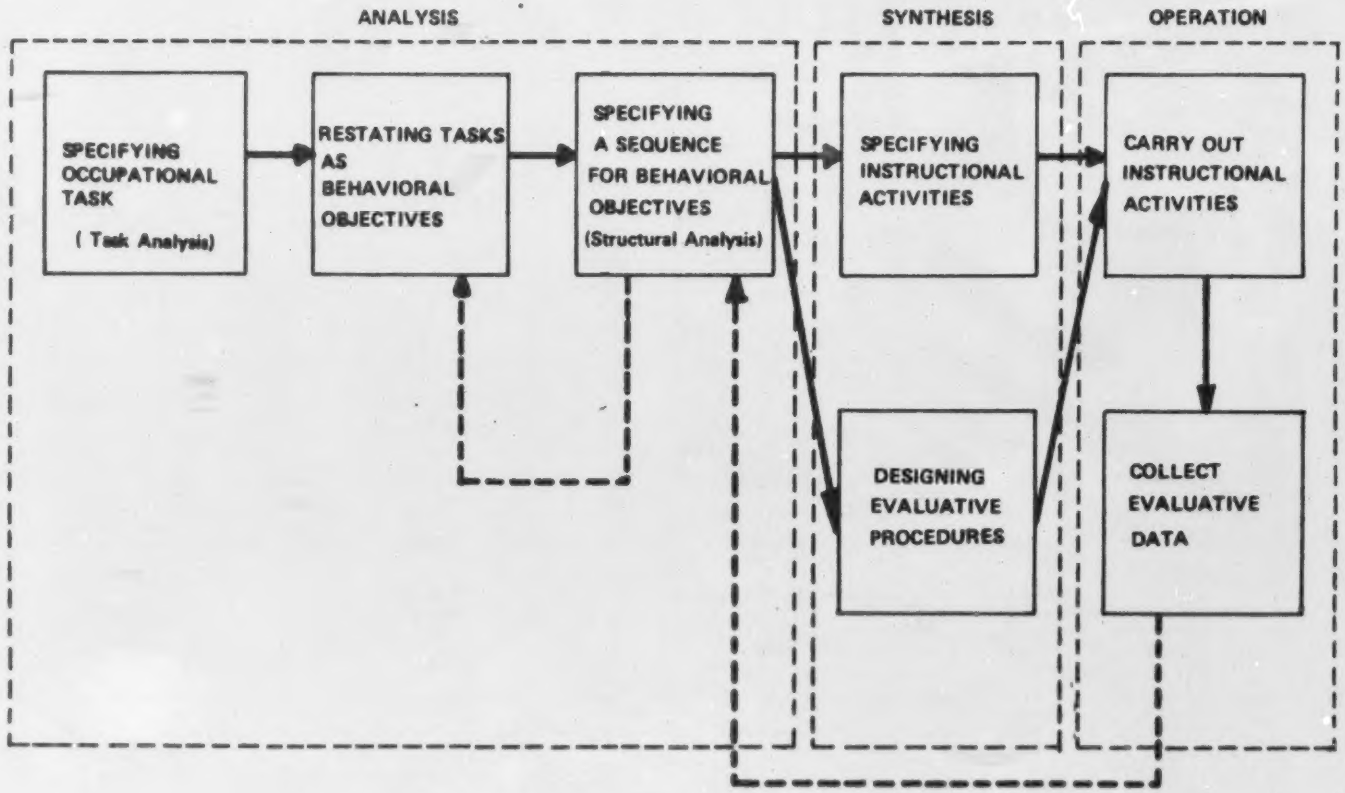
INSTRUCTIONAL SYSTEM DESIGN DIAGRAM


COLLECT JOB DATA
IDENTIFY TRAINING REQUIREMENTS
SELECT COURSE CONTENT
SELECT INSTRUCTIONAL STRATEGIES
ESTABLISH COURSE PREREQUISITES
FORMULATE PERFORMANCE OBJECTIVES
DEVELOP TRAINING AIDS
DEVELOP COURSE OUTLINES
DETERMINE EQUIPMENT REQUIREMENTS
DETERMINE INSTRUCTOR REQUIREMENTS
DEVELOP INSTRUCTIONAL MATERIALS
EVALUATE INSTRUCTION
CONDUCT INSTRUCTION
ANALYZE TEST RESULTS
FOLLOWUP STUDENT PERFORMANCE

Bureau of Training, U.S. Civil Service Commission. An Application of a Systems Approach to Training: A Case Study, Pamphlet T-2, 1969, U. S. Government Printing Office, 30¢.

THE SPECIALIST MODEL FOR INSTRUCTIONAL SYSTEM DEVELOPMENT

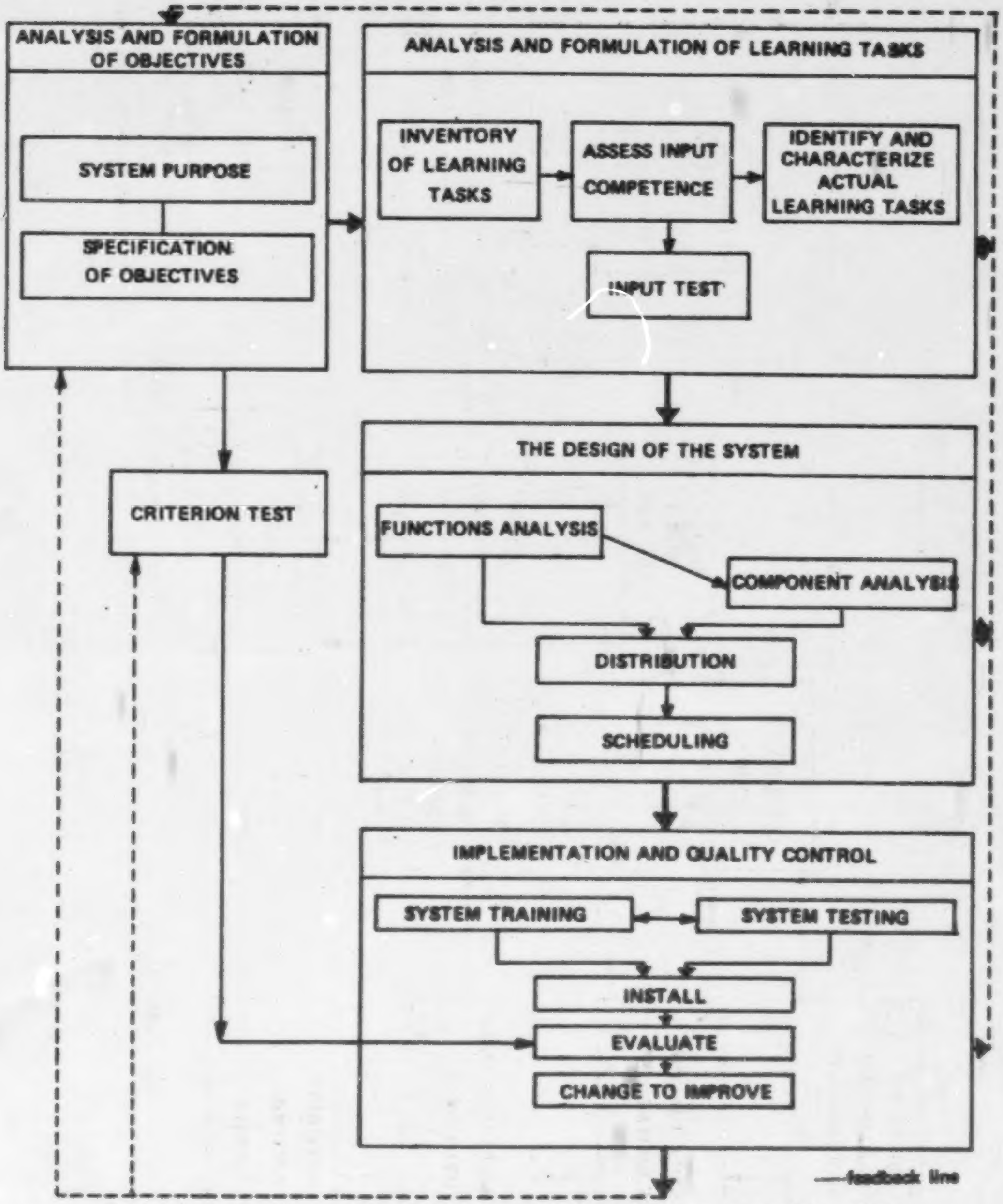

INPUT
DESIGN COORDINATOR
Analyzes Specific Problems
EVALUATION SPECIALIST
Determines Objectives and Develops Tests
INSTRUCTIONAL SPECIALIST
Develops Instructional Flowchart
INSTRUCTIONAL SPECIALIST
Determines Communication Patterns
INSTRUCTIONAL SPECIALIST
Determines Teaching Examples
MEDIA SPECIALIST
Determines Form and Transmitter
MATERIALS SPECIALIST
Searches for Ready-Made Materials
PRODUCTION SPECIALIST
Produces Desired Materials
TECHNICIANS
Prepare Physical Setting for Trial Run
INSTRUCTOR
Trial Run
EVALUATION SPECIALIST
Test & Evaluate
Collect Feedback
DESIGN COORDINATOR
Redesign
OUTPUT: Instructional System


ANALYSIS
SYNTHESIS
OPERATION
SPECIFYING OCCUPATIONAL TASK (Task Analysis)
RESTATING TASKS AS BEHAVIORAL OBJECTIVES
SPECIFYING A SEQUENCE FOR BEHAVIORAL OBJECTIVES (Structural Analysis)
SPECIFYING INSTRUCTIONAL ACTIVITIES
DESIGNING EVALUATIVE PROCEDURES
CARRY OUT INSTRUCTIONAL ACTIVITIES
COLLECT EVALUATIVE DATA

A SYSTEMS MODEL FOR INSTRUCTIONAL MANAGEMENT

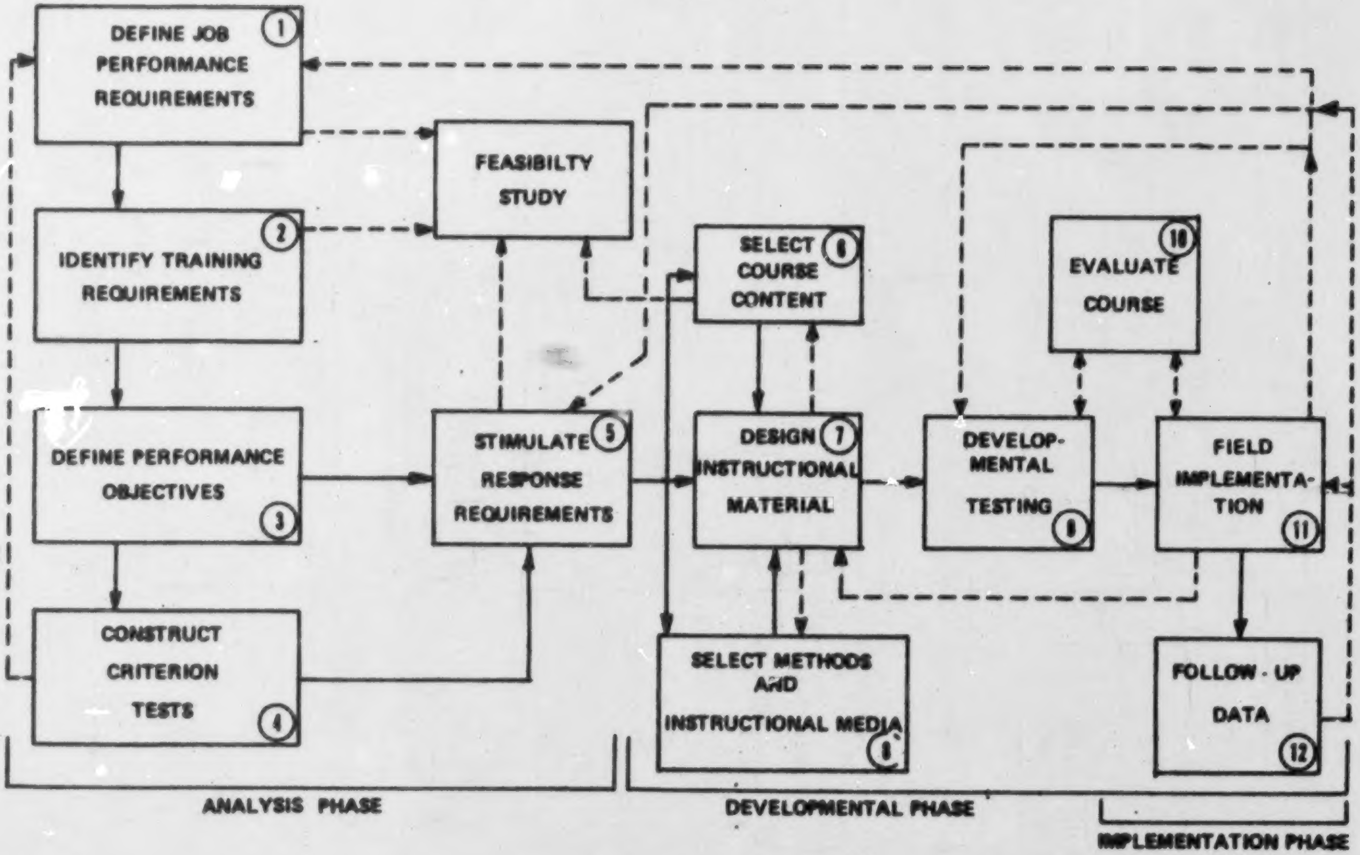
Tuckman, B. W. and Edwards, J. J. "A Systems Model for Instructional Design and Management," Educational Technology, September 1971.

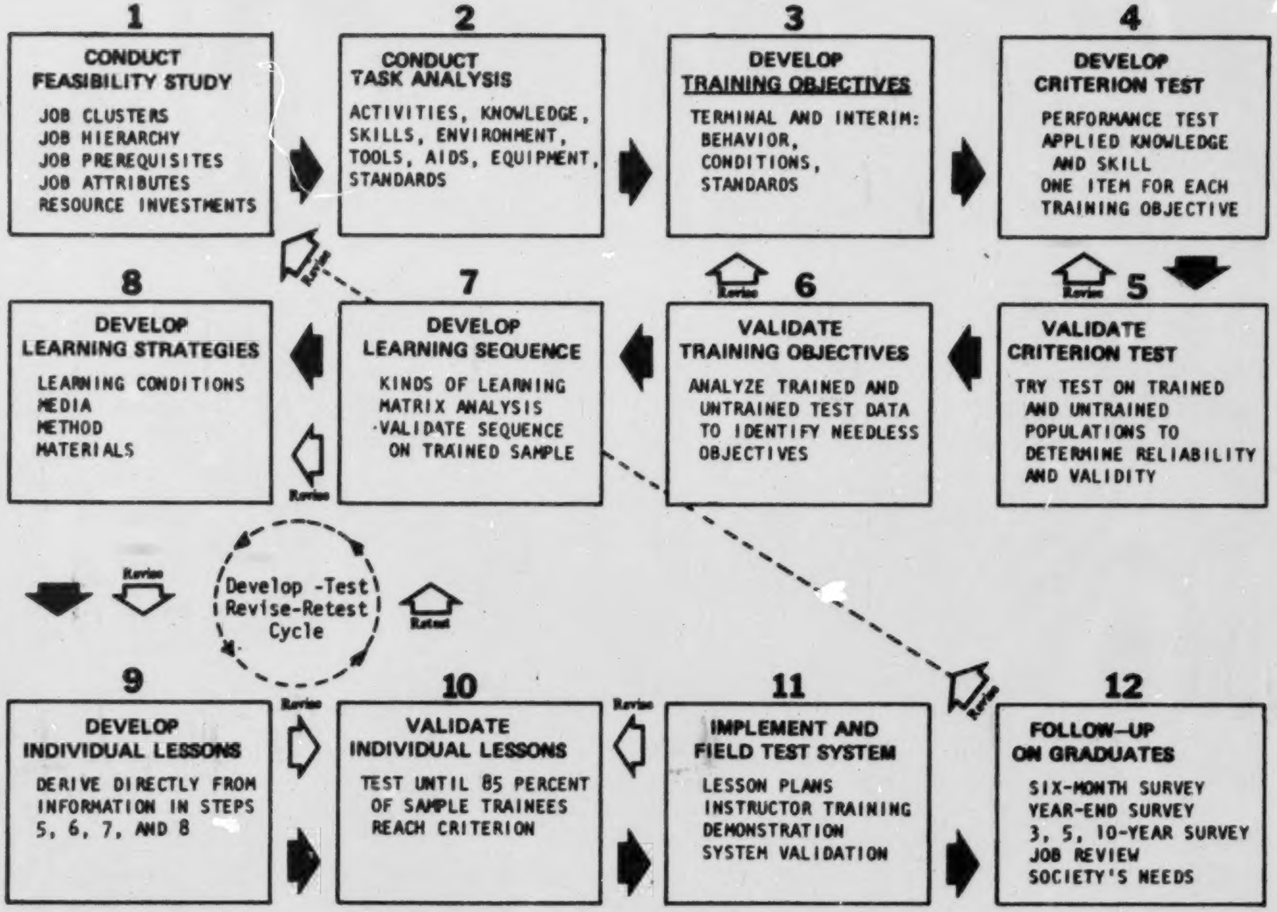
DESIGN OF INSTRUCTIONAL SYSTEMS


ANALYSIS AND FORMULATION OF OBJECTIVES
SYSTEM PURPOSE
SPECIFICATION OF OBJECTIVES
ANALYSIS AND FORMULATION OF LEARNING TASKS
INVENTORY OF LEARNING TASKS
ASSESS INPUT COMPETENCE
IDENTIFY AND CHARACTERIZE ACTUAL LEARNING TASKS
INPUT TEST
CRITERION TEST
THE DESIGN OF THE SYSTEM
FUNCTIONS ANALYSIS
COMPONENT ANALYSIS
DISTRIBUTION
SCHEDULING
IMPLEMENTATION AND QUALITY CONTROL
SYSTEM TRAINING
SYSTEM TESTING
INSTALL
EVALUATE
CHANGE TO IMPROVE
—feedback line

Banathy, Bela. Instructional Systems, Fearon Publishers, Palo Alto, Calf., 1968.

A SYSTEMS APPROACH TO INSTRUCTION


DEFINE JOB PERFORMANCE REQUIREMENTS ①
IDENTIFY TRAINING REQUIREMENTS ②
DEFINE PERFORMANCE OBJECTIVES ③
CONSTRUCT CRITERION TESTS ④
FEASIBILTY STUDY
STIMULATE RESPONSE REQUIREMENTS ⑤
SELECT COURSE CONTENT ⑥
DESIGN INSTRUCTIONAL MATERIAL ⑦
SELECT METHODS AND INSTRUCTIONAL MEDIA ⑧
DEVELOP-MENTAL TESTING ⑨
EVALUATE COURSE ⑩
FIELD IMPLEMENTA-TION ⑪
FOLLOW - UP DATA ⑫
ANALYSIS PHASE
DEVELOPMENTAL PHASE
IMPLEMENTATION PHASE


1
CONDUCT FEASIBILITY STUDY
JOB CLUSTERS
JOB HIERARCHY
JOB PREREQUISITES
JOB ATTRIBUTES
RESOURCE INVESTMENTS
2
CONDUCT TASK ANALYSIS
ACTIVITIES, KNOWLEDGE, SKILLS, ENVIRONMENT, TOOLS, AIDS, EQUIPMENT, STANDARDS
3
DEVELOP TRAINING OBJECTIVES
TERMINAL AND INTERIM: BEHAVIOR, CONDITIONS, STANDARDS
4
DEVELOP CRITERION TEST
PERFORMANCE TEST
APPLIED KNOWLEDGE AND SKILL
ONE ITEM FOR EACH TRAINING OBJECTIVE
Revise
5
VALIDATE CRITERION TEST
TRY TEST ON TRAINED AND UNTRAINED POPULATIONS TO DETERMINE RELIABILITY AND VALIDITY
Revise
6
VALIDATE TRAINING OBJECTIVES
ANALYZE TRAINED AND UNTRAINED TEST DATA TO IDENTIFY NEEDLESS OBJECTIVES
7
DEVELOP LEARNING SEQUENCE
KINDS OF LEARNING
MATRIX ANALYSIS
VALIDATE SEQUENCE ON TRAINED SAMPLE
Revise
8
DEVELOP LEARNING STRATEGIES
LEARNING CONDITIONS
MEDIA
METHOD
MATERIALS
Revise
Revise
Develop -Test Revise-Retest Cycle
Retest
9
DEVELOP INDIVIDUAL LESSONS
DERIVE DIRECTLY FROM INFORMATION IN STEPS 5, 6, 7, AND 8
Revise
10
VALIDATE INDIVIDUAL LESSONS
TEST UNTIL 85 PERCENT OF SAMPLE TRAINEES REACH CRITERION
Revise
11
IMPLEMENT AND FIELD TEST SYSTEM
LESSON PLANS
INSTRUCTOR TRAINING
DEMONSTRATION
SYSTEM VALIDATION
Revise
12
FOLLOW-UP ON GRADUATES
SIX-MONTH SURVEY
YEAR-END SURVEY
3, 5, 10-YEAR SURVEY
JOB REVIEW
SOCIETY'S NEEDS

Flow Chart of Training System Development Process

SOURCE: F. Coit Butler, Instructional Systems Development for Vocational and Technical Training, Educational Technology Publications, Englewood Cliffs, New Jersey, p.53.

PERSONNEL DEVELOPMENT

DEVELOPMENT OF PROFESSIONAL STAFF IN CURRICULUM FUNCTIONS

by
Frank H. Wimer*

The purpose of this paper is to attempt to convey that curriculum, its materials and its application must meet an emerging set of new criteria and that personnel involved must be able to use an additional new "set of tools."

Contained are materials on:

Trends in Education - Learning

Trends in curriculum

Trends in methods of approaching the problem

Management and organizational concepts

Some conceptual and practical tools

Some questions that need to be answered

Some answers to questions.

One purpose of vocational-technical educaton is to assist persons to be successfully employed.

I assume there is a problem and assume that part of the problem is in the curriculum.

The trees on the following page gives one an analysis of the problem, and Mr. Murphy has a set of laws which help us understand what might happen.

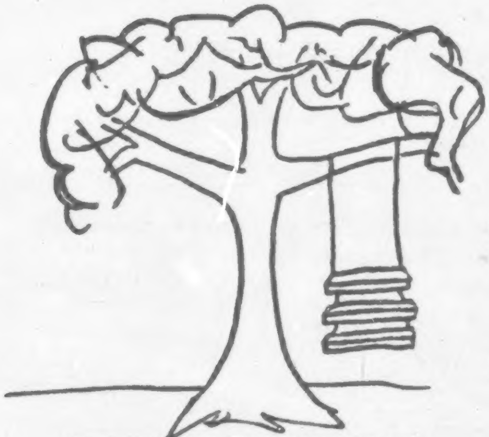
MURPHY'S LAWS

1. In any field of scientific endeavor, anything that can possibly go wrong, will go wrong.

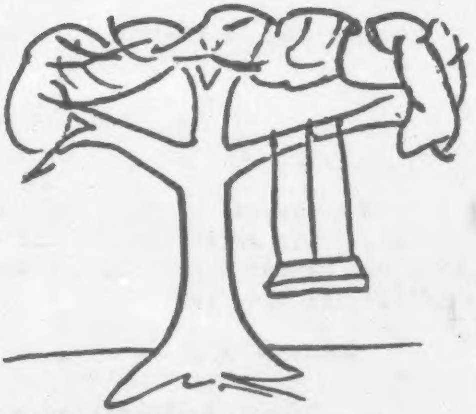
2. Left to themselves, things always go from bad to worse.

---

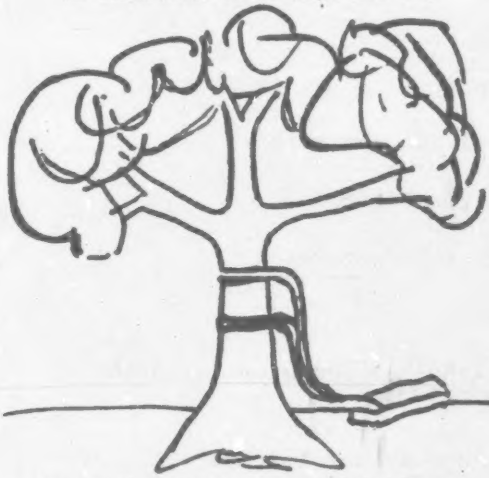
*Frank Wimer, Director of Planning, Budgeting and Research Coordinating Counsel for Vocational and Technical Education, 216 Old Capitol Building, Washington, D.C.



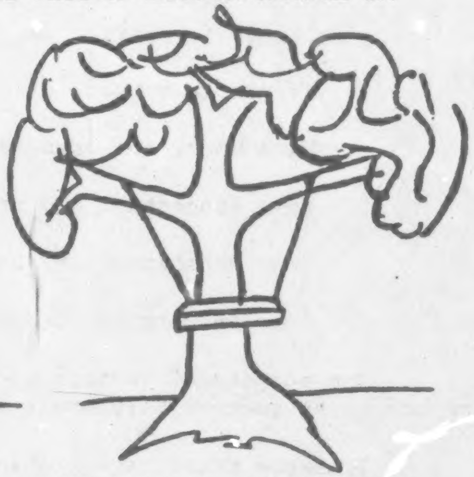
AS CURRICULUM STUDY REQUESTED IT.



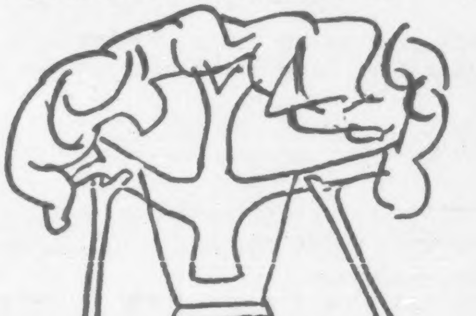
AS BOARD OF EDUCATION APPROVED IT.



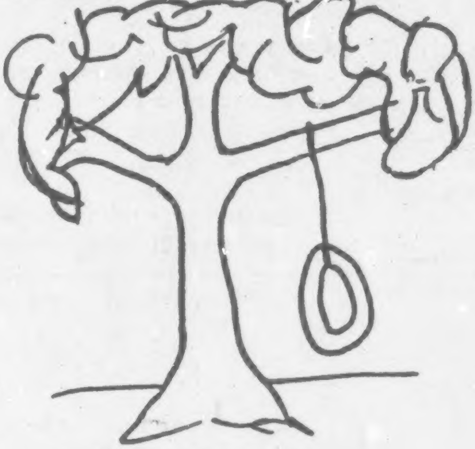
AS EDUCATION SPECIALISTS DESIGNED IT.



AS ADMINISTRATION IMPLEMENTED IT.



AS TEACHERS INSTRUCTED IT



WHAT THE STUDENTS NEEDED

3. If there is a possibility of several things going wrong, the one that will go wrong, is the one that will do the most damage.

4. Nature always sides with the hidden flaw.

5. No matter what goes wrong, there is always someone who knew it would.

6. If everything seems to be going well, you have obviously overlooked something.

7. It is a proven fact that if the prototype works perfectly, the production units are bound to fail.

The problem has four significant dimensions.

1. In many states and in many schools, the real hard decisions have not been made. Decisions such as:

   Policies on a basic structure of curriculum development- (Will the curriculum be based on an occupational analysis? Will the curriculum be open or closed - will it have alternative activities?)

   Who is responsible for what part of curriculum development?

   How will the effort be evaluated?

   How will the effort be financed?

2. There is a corps of competent personnel available but we have no skill inventory.

3. The greatest need is for the development of leaders with management skills.

4. The greatest learning will come about when there is a plan and people are working that plan. Growth comes from applying what we already know.

TRENDS

There has been an increasing amount of writing which indicates the trends for the future in education. For example:

Alternative Futures for Learning an annotated bibliography by Michael Marien, a publication of the Educational Policy Research Center at Syracuse. (Supported by U.S.O.E.). The author has included not only a bibliography but has indicated a major theme (Page IX). That of the change from closed teaching systems to open learning systems. This is further illustrated by a chart, page X, which attempts to define this change in the context of several major elements

> "The Major Theme: From Closed Teaching Systems to Open Learning Systems. To broadly summarize the literature, there is a basic, long-term multifold trend from closed teaching systems to open learning systems. The chart on the following page summarizes the many elements of this trend by distilling empirical trend analysis, criticisms, forecasts, and proposed future states for all levels of education. There are many ways in which this basic trend is promulgated. At lower levels, "informal education: is presently the fashionable title, as popularized by Silberman's Crisis in the Classroom (243). At higher levels, education for human development is the key term. Overall, there is a fundamental transition from considering teaching and other inputs into the educative process to the consideration of learning outcomes. Thus the title of this bibliography, in line with the shift in attention from institutions to individuals, emphasizes "Alternative Futures for Learning," rather than "Alternative Futures for Education." Whether or not educating institutions are involved, the new concern is focused on learning wherever it occurs. This spirit is notably embodied by the recently established Commission on Non-Traditional Study (923).
>
> "In one respect, only one alternative to the present is suggested by the literature. But there are many variations to this single basic theme, reflecting the complex pluralism that will surely characterize our future education that seeks to satisfy multiple needs and multiple ideologies. Moreover, the traditional closed teaching systems remain as a most probably future for many Americans, whether desired or not. Yet, in all of the documents cited here, there is not a single one that defends the present system. Stated conversely, everyone advocates some degree of change and nearly all of the advocacy is for open systems. Yet the traditional practices persist, as discovered by the all-too-few examples of somber empiricism such as Goodlad (188), Oettinger (321), Dressel and Delisle

> (742), and Ladd (750). The humanistic revolution that has been "described," forecasted, and advocated, has yet to take place. But will it?"

It is evident that change is necessary. This change from closed teaching to open learning puts a tremendous responsibility to develop the materials which fit this new trend and to develop personnel capable of not only developing the materials but capable of using them effectively.

Reprinted by permission of Michael D. Marien.

In order to cope with the changes occurring, we need an updated set of criteria for curriculum systems:

1. Individualized
2. Self-pacing
3. Multisensory
4. Immediate feedback of performance
5. High degree of student success
6. Easily updated
7. Hands-on
8. Based on industry performance standards
9. Open entry - open exit
10. Allows for school and work to be interspersed
11. Provides articulation without repetition
12. Allows learner a high degree of self-control.

TRENDS IN METHODS OF CURRICULUM DEVELOPMENT

1. From single school constructed to massive and funded projects.
2. Use of a variety of talents. Many of whom are not teachers. (analysts, psychologists, writers and editors, objective writers, media and learning specialists).

THE BASIC LONG-TERM MULTIFOLD TREND IN EDUCATION

	CLOSED TEACHING SYSTEMS	OPEN LEARNING SYSTEMS
ALTERNATE TITLES	Teacher and/or institution centered Tight system; Rational mechanics; Cause-effect paradigm Control-centered	Student and/or child centered Loose system Learning-centered; Inquiry approach; Developmental; Discovery education
SOCIETAL CONTEXT	Agricultural; Industrial Autocratic; Plutocratic; Gerontocratic Static and simple	Postindustrial; Knowledge-based, Service Society Democratic; Meritocratic; Self-renewing Dynamic and complex
BELIEFS ABOUT LEARNING	Teaching results in learning Learning requires discipline, work, drill, memorization, pain, control Teacher as source of knowledge, student as passive absorber Capability confined to a few; the genius, the gifted	Good teaching aids learning, bad teaching inhibits it Learning is enjoyable, follows from pursuit of interests Learning from many sources, including peers; student as active participant Extensive latent potential in all
ADMINISTRATION	Input oriented Hierarchical leadership	Input-Service-Benefit oriented, PPBS Pluralistic, participatory
CURRICULUM	Narrow, fixed, retrospective Classics, Principles, Truth, facts, deduction, Maxims Determined by teacher and/or extra-classroom authority Programmatic, sequential; Lesson plans strictly followed Group study prescribed for all students Western culture as superior to primitives, heathens, Noble Savages, and the underdeveloped; Us - Them: emphasis on differences	Broad, changing present and future-oriented Methods, principles, induction, creativity, intuition, randomness Determined by teacher and/or student Interchangable programettes, Modular learning; Lesson plan as guide to options Independent study designed to fit individual needs and interests Humanistic, pan-cultural; Us: emphasis on similarities

Alternative Futures for Learning: An Annotated Bibliography of Trends, Forecasts, and Proposals by Michael D. Marien.

STUDENT-TEACHER RELATIONS	Students are a collectivity Teacher as Authority, student as follower; control as instrumental technique Feeling Withheld; I - It Single Teacher	Compensatory education for exceptional children, the physically and linguistically handicapped, the underprivileged Professional as Learning Facilitator or Senior Learner; student as junior colleague Feelings exposed and respected, student evaluation of teachers; I - Thou Multi-adult exposure, team teaching, guests, differentiated staffing
STUDENT CONDUCT	Compulsory attendance: no choice of institution Physical punishment for "Misbehavior" No student recourse for injustice Dropping out is fault of student; shaming for ignorance Established rules and routines	Optional participation: alternatives offered Counseling for personal difficulties Ombudsman, legal measures Many possible sources of failure: environmental, institutional and individual Democratic development of rules and routines as necessary
FEEDBACK	Formal, mechanistic, "Right" answers Strong reliance on quantitative measures	Multi-faceted, formal and informal, open-ended Use of quantitative measures as necessary
REWARDS	Grades, fixed proportion of failures, class rankings, honors, medals, degrees Recognition through competition in a few areas of excellence Learning has vocational and social utility	Pass-fail, non-grading Deemphasis of competition, promotion of diversity and many areas of excellence; a taste of success for all Rewards of learning are inherent
GOALS	Socialization, training, moral education, passing on civilization, knowing; education of intellect only Getting an Education, being educated, terminal education	Development of whole individual, investigatio of cultural heritage, questioning Learning how to learn, lifelong learning, education as a beginning
EXTRA-CLASSROOM ENVIRONMENT	Restrictive, "In Loco Parentis" Physical and intellectual separation from world	Permissive, largely peer controlled Interlinkage of school and life, "School Without Walls"

SPACE	"Grid" architecture, stationary furniture Arbitrarily assigned seats Teaching in classrooms Specially designated learning institutions, outside learning ignored	Omnidirectional space and flexible furnishings, choice of environments Student freedom to choose seats Learning in classrooms, learning resource center, home, dormitory, community, world Recognition and encouragement of formal and informal learning opportunities throughout society, equivalent credit for outside learning
TIME	Collective pace Ordered structure of class hours and course credits Uninterrupted schooling, followed by uninterrupted work	Individual pace Flexible scheduling Learning and work interspersed throughout lifetime; learning a living

NOTE: This is a distillation of present trends, criticisms, forecasts, and prescriptive future states at all levels of education. To enable a cogent overview, there is a necessary abstraction and simplification. Open Learning Systems, however, should not be confused with situations that are purely chaotic, anarchistic, and unstructured.

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3. Team efforts versus isolated individual efforts.

4. No longer designed around a single text book.

If the trend is away from the lone individual developing curriculum and toward team effort, the leader must learn how to organize and move groups to accomplish the objective.

Leadership is exerted only when dealing with people. It is not exerted when working in isolation.

The trend is also away from positions of authority to authority as a result of competence. The ability to inspire, to lead - to have followers. The ability to use the most effective techniques in achieving the objective. When the leader is not effective in the application of these techniques he is no longer the leader.

LEADERSHIP

Real Leadership is in the Management of Projects.

Leadership - - -

- To write specifications
- To manage projects designed to these specifications
- To select team members appropriate to the tasks
- To recognize special talents and assign work to provide satisfaction
- To evaluate the pilot tests of the project results
- To modify to correct deficiencies
- To assist groups and/or teams to participate in a responsible manner both in accomplishing the objectives and in promoting their individual talents and their cooperative skills.

Leader - - -

- Has followers, willing to follow
- Has technical skills
- Is best qualified in the use of these skills

- Followers believe he can assist them accomplish their goals

- Has a full range of techniques - methods

  (A hatful of models, etc. which can help bring reality to the situation)

- Has ability to manage all resources to accomplish the objectives.

MURPHY'S LAW SAYS:

The chances of being accidentally successful are very small.

There are enough ways to fail, that you had better plan in order to be successful.

CHANGES

Three major changes have been occurring in recent years:

To consumer orientation from product orientation

To systems from subsystems

To managerial approach (initiator) from facilitator (reactor).

Perhaps we can keep Murphy's Law from taking over. At this point I want to suggest some basic questions which must be answered.

If we are to do the job that needs to be done, we must seriously consider and answer some basic questions.

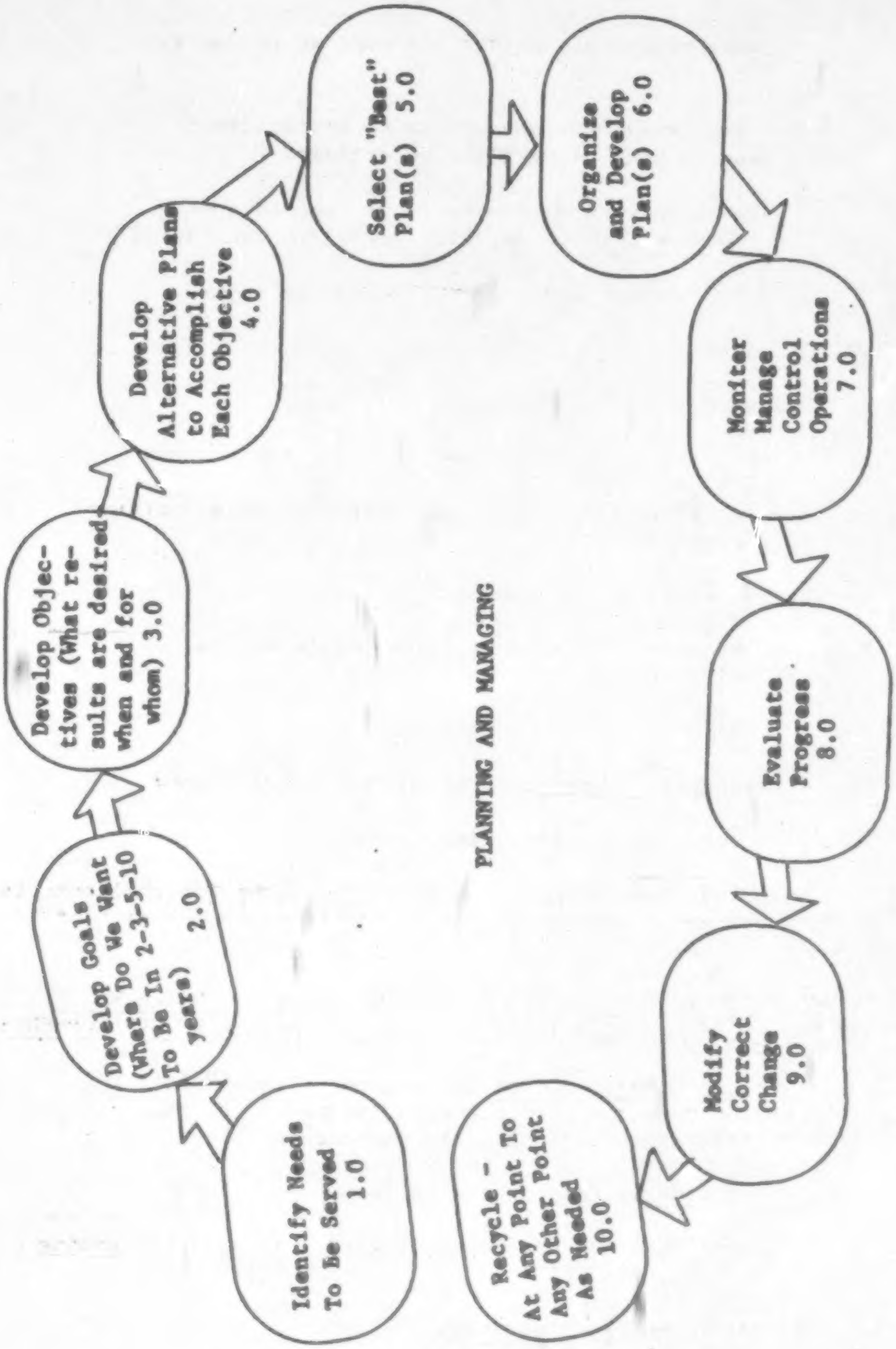
Planning and Organization:

What business are we in and what is our primary mission?

What directions - goals should we pursue in carrying out our mission?

What key results are necessary in order to stay in business?

Do we have indicators which tell us and others how well we are doing?


Identify Needs To Be Served 1.0
Develop Goals (Where Do We Want To Be In 2-3-5-10 years) 2.0
Develop Objectives (What results are desired when and for whom) 3.0
Develop Alternative Plans to Accomplish Each Objective 4.0
Select "Best" Plan(s) 5.0
Organize and Develop Plan(s) 6.0
Moniter Manage Control Operations 7.0
Evaluate Progress 8.0
Modify Correct Change 9.0
Recycle – At Any Point To Any Other Point As Needed 10.0

PLANNING AND MANAGING

What measurable objectives must we accomplish to stay in business?

What tasks or steps are to be accomplished and by when to meet the objectives?

Do we have direction as to who should and commitment as to who will carry out the tasks?

What resources are committed to the tasks?

EVALUATION (control)

Did we do what we planned to do?

If not, can we identify the items and the causes?

Are we eliminating the problems and taking advantage of the opportunities?

Are we exerting professional leadership?

Creating a climate in which people can be self-motivated?

Exercising decision making?

Actively supporting total staff development?

Providing for effective communications?

Assuming these are the important questions, or challenge is to assist our teams to mutually arrive at consensus for each of them.

SUGGESTED CRITERIA FOR SELECTION OF OCCUPATIONS FOR WHICH MAJOR EFFORT SHOULD BE EXPENDED IN ANALYSIS AND/OR MATERIALS DEVELOPMENT:

1. A high demand occupation (number of new "slots") plus number of replacements in present slots. Either in numerical or in percentage change.
2. Training is not now available.
3. Legal requirements for increased standards (licensing changes, etc.).
4. Major equipment changes.

5. Industry or occupational groups requesting an analysis and/or materials be developed.

6. Critical events related to safety (loss of life and/or property due to inadequate performance).

7. Environmental impact.

TOOLS

The following are some examples of "tools" which can assist in the planning and managing curriculum development.

One technique being used to determine whether expansion should occur is the comparison of trend lines of enrollment, potential enrollment, completions and placement. (see page 300)

One tool which can be used by educators is a matrix which forces decisions on issues and documents those decisions. That tool is effective in resolving who has what responsibility, who else should be involved, and who should be kept informed in those situations which require involvement of a great many various persons and groups.

RESPONSIBILITY CHARTS

Purposes

Define responsibility and authority

Identify functions, tasks and their sequence

Force decisions on functions and responsibilities

Show duplication of

Functions

Authority

Responsibilities

"Tie Down" budget

Show good performance or poor performance

Clarify the job to be done

For the purposes of this discussion let us assume that we have determined the functions which need to be accomplished to properly develop a particular curriculum. (see pages 300 and 302)

CURRICULUM DEVELOPMENT FUNCTIONS:

A. Develop educational specifications -

   1. Determine occupational field
   2. Develop occupational analysis
   3. Identify "critical events" in occupation
   4. Develop performance standards (objectives)
   5. Develop equipment standards
   6. Develop facility standards
   7. Develop teacher competency standards
   8. Validate the specifications.

B. Develop curriculum model -

   1. Assess resources
   2. Assess clientele needs
   3. Assess climate
   4. Determine appropriate alternative models
   5. Select model
   6. Set policies.

C. Develop learning package -

   1. Determine level (awareness, orientation, skill development or upgrade)
   2. Determine learning strategies
   3. Write enabling objectives based on performance standards
   4. Sequence objectives

CHART #F/C 2-72

DATE JAN. 11, 1972
FIELD DATA PROCESSING
CODE (OE) 14.02
SYSTEM Com. COLLEGE
ANALYST Vitter

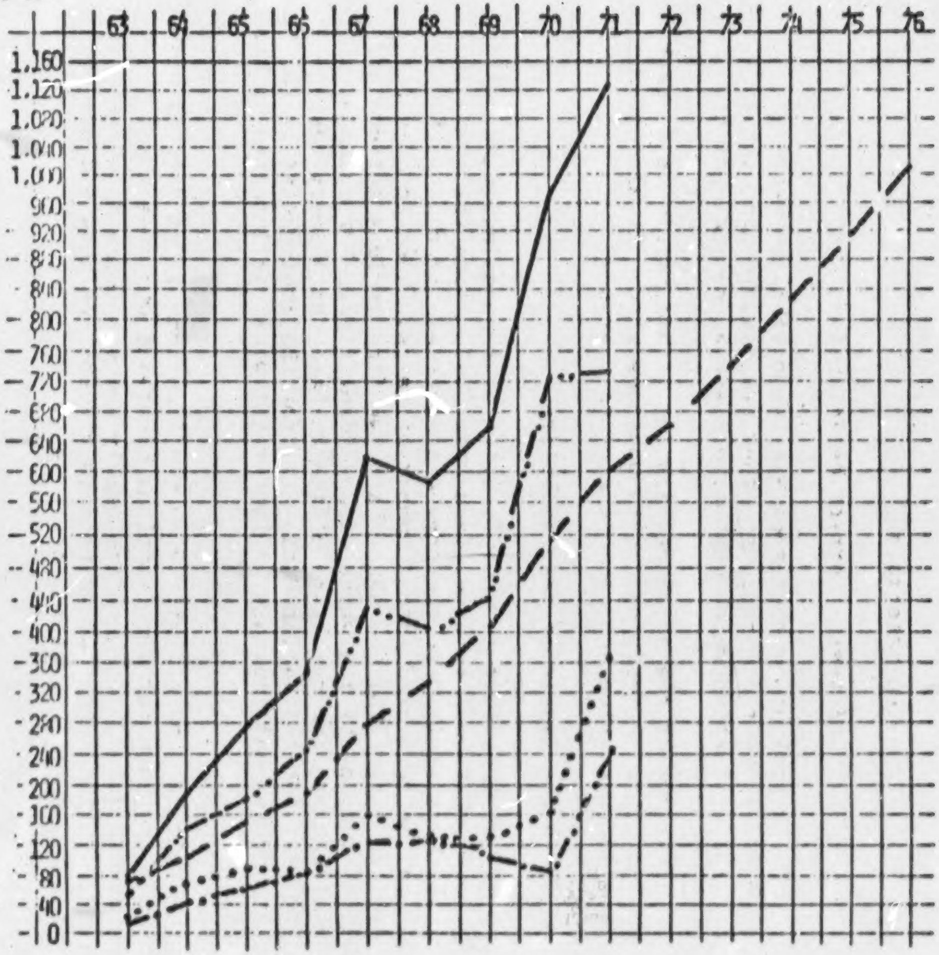
8.0 ENROLLMENT IN DATA PROCESSING

8.1 TOTAL
— — —8.1.1 POTENTIAL 5.0 X 7.2
- - - - 8.1.2 PROJECTED
————8.1.3 ACTUAL

8.2 FIRST YEAR
- - - - 8.2.1 PROJECTED
—··—··—8.2.2 ACTUAL

9.0 GRADUATES
- - - - - PROJECTED
. . . . . ACTUAL

10.0 EMPLOYMENT
- - - - - PROJECTED
—·—·—ACTUAL



5. Determine a range of alternative activities

6. Determine methods/media

7. Develop materials

8. Trial test - correct deficiencies.

Let's look at another tool - a responsibility matrix (page 303). Note the functions. They are divided into three groups plus evaluation which must take place at several points.

Now look at the personnel listing. This matrix is a graphic means of forcing decisions as to who does what. It also provides documentation and communicates to everyone.

Note the levels of responsibility.

If we want further specification of responsibilities, a multi-level chart can be used. (see page 304) Note the overall chart which is similar to the previous chart except that each "cell" can be separated into a number of parts. When looking at one cell in (page 305) the next chart, we find various actions and levels of responsibility which can be identified. For example, if the decision was for the state office to have the primary responsibility (a) for initiating action (1) for the implementation (B) of the occupational analysis, a letter (a) would be inserted in the subcell B-1.

This same matrix with some modifications is used to elicit from industry when certain functions occur and who does them. (see pages 302 & 306) There are really not very many "new" things, only new applications, but we need to use what we know and use our imagination as to the various other uses.

MAINTENANCE TERMS

ADJUST: To mechanically or electronically bring into a specified tolerance ANY subsystems, module, or component for the purpose of making the functional assemblies operate as a unit; e.g., setting of limit switches, pressure valves adjusting clutch faces etc.

CALIBRATE: To periodically compare installed equipment with equipment established as an authorized or recognized standard and to correlate or adjust as necessary the tested equipment to meet the standard.

CHECKOUT: To establish or ascertain whether the item is properly functioning.

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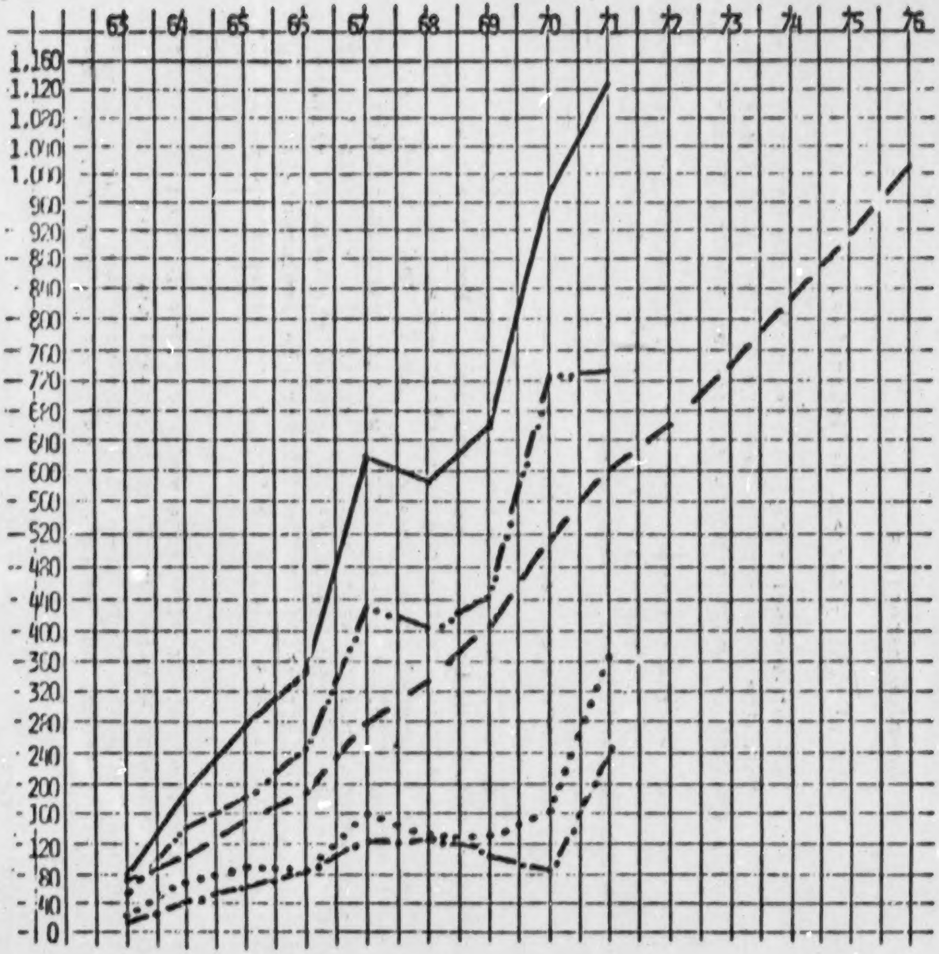
—·—·—ACTUAL



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CHECKOUT: To establish or ascertain whether the item is properly functioning.

RESPONSIBILITY CODE

☒ Manages
▣ Direct Supervision
☐ Work Is Done
⧄ Finalizes Decision
▤ Must Be Consulted
▥ Must Be Notified
▢ Can Assist

CURRICULUM DEVELOPMENT FUNCTIONS

Personnel	Educational Specifications								Curriculum Model						Learning Package									
	Occup Field	Occup Analysis	Critical Events	Performance Stds	Equip Stds	Facility Stds	Teacher Stds	Validate	Assess Resources	Assess Clientele Needs	Assess Climate	Alternative Models	Select Model	Set Policies	Level	Strategies	Enabling Obj	Sequence Obj	Alternative Activities	Methods / Media	Materials Dev	Trial Test	Evaluate	
Local Director																								
Teachers																								
Counselors																								
Industry																								
Students																								
State Curr Spec																								
Analyst																								
Psychologist																								

INDIVIDUALS, AGENCIES, ORGANIZATIONS, UNITS INVOLVED

MAJOR TASKS - FUNCTIONS - STEPS

		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	A																									
	B																									
	C																									
	D																									
	A																									
	B																									
	C																									
	D																									
	A																									
	B																									
	C																									
	D																									
	A																									
	B																									
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	D																									
	A																									
	B																									
	C																									
	D																									
	A																									
	B																									
	C																									
	D																									

		STATE OFFICE					STATE ADVISORY COMMITTEE				
		1	2	3	4	5	1	2	3	4	5
OCCUPATIONAL ANALYSIS	A										
	B										
	C										
	D										
	A										
	B										
	C										
	D										

K E Y

Actions

A - Decision Making
B - Implementation
C - Accountability
D -

1 - Initiating Action
2 - Development
3 - Operations
4 - Evaluation
5 -

Level of Responsibility

a - Primary Responsibility
b - Secondary Role in Primary Responsibility
c - Participate
d - Provide Inputs
e - Receive Information

Program: Wastewater Treatment Plant Operator Training

Symbols:
x = Plant Personnel
t = Plant Personnel with technical support by contractor
c = Contractor

Work Breakdown structure for:

Wastewater Treatment System	Operation - Maintenance - Testing																		
	Monitor-Operate	Visual Check	Clean-Purge	Decontaminate	Protect-Service	Store-Handle	Adjust-Calibrate	Checkout-Test	Remove-Install	Replace-Repair	Overhaul	Inspect	Composite Test	System Align					
Sewers (exclusive of storm sewers)																			
Sewer Lines																			
Main Sewer Lines	x	x	x							c	c	x							
Laterals & Service Connections	x		x							c	c	x							
Intercepter Lines	x	x	x							c	c	x							
Outfall Lines	x	x	x							c	c	x							
Manholes, Flush Tanks, etc.	x	x	x							c	c	x							
Lift Stations	x	x	x	x	x	x	x												
Dry Well Facilities	x	x	x	x	x		x		x	x	x	x							
Wet Well Facilities	x	x	x						x	x	x	x							
Screening Facilities	x	x	x						x	x	x	x							
Grit Facilities	x	x	x	x	x		x		x	x	x	x							
Pumping Equipment	x	x	x		x	x	x		x	x	x	x							
Pumps	x	x	x		x	x	x	x	x	x	x	x	x						
Pump Drives	x	x	x		x	x	x	x	x	t	t	t	x						
Controls	x	x	x		x	x	x	x	x	t	t	t	x						

INSTALL: To connect, mount, and physically return the item removed to its original configuration.

CLEAN: To remove residual accumulations of dust, dirt, oil, fuels, gases, liquids, and lubricants.

COMPOSITE TEST: To establish that the operating parameters have been met after integrating the item with multiple subsystems. Normally, composite test is performed on a complete subsystem.

DECONTAMINATE: To remove toxic contaminants.

HANDLE: Self-explanatory.

INSPECT: To perform necessary actions after maintenance to insure quality of repair. (Quality Control function)

MONITOR: To continuously monitor equipment or operation.

OPERATE: To continuously operate equipment or vehicle.

OVERHAUL: Complete disassembly, detailed inspection, rework, replacement of unserviceable parts, assembly and test of equipment.

PROTECT: To provide environmental protection for any item of equipment in any configuration status; e.g., temperature control, humidity control, air condition control, pressurize, contamination detection, place in containers, etc.

These tools also force some other questions. Questions regarding just what is meant by the function. Why the function needs to be done. What tasks are involved in each and how will we know when it has been satisfactorily accomplished.

This leads us to another tool that can be used. (VIS 2.5.0 see page 311). This provides a backup information which clarifies the responsibilities. It also identifies the competencies required in order to accomplish this function. I want to give credit for this and the other VIS charts to Gilbert Juerlein of The Washington State Coordination Council for Occupational Education.

TALENT

Do you know who has the talent that is needed to help accomplish the objectives; where the persons are located; whether they are interested; and whether they are available?

Here is another tool, manpower matrix, which can also help in making decisions and in documenting them. (see page 309)

There are many other "tools" which can aid in the development of curriculum. Some samples are:

- The VIS form 2.0-5 - to identify functions; page 310.
- A planning form D.V.E. - 70 - 1 (page 312) which documents the plan, schedule and committed funds.
- A Gantt chart (page 313) which shows sequences and schedule of tasks.
- A function analysis form (VIS 2.4.0-A) for the purpose of displaying functions and their relationship. (see page 315)

SYSTEMS

If you look at the various proposed curriculum models, they are actually systems and use the "systems approach."

Then we must look at the kinds of abilities needed in order to deal in this manner.

This is a "people" problem.

"Training Educational Administrators in Anasynthesis," by Leonard C. Silvern (Educational Technology, February, 1972, page 8), defines a system as "the structure of organizations of an orderly whole, clearly showing the interrelations of the parts to each other and to the whole itself."

It has four major parts: 1) analysis, 2) synthesis, 3) modeling, and 4) simulation.

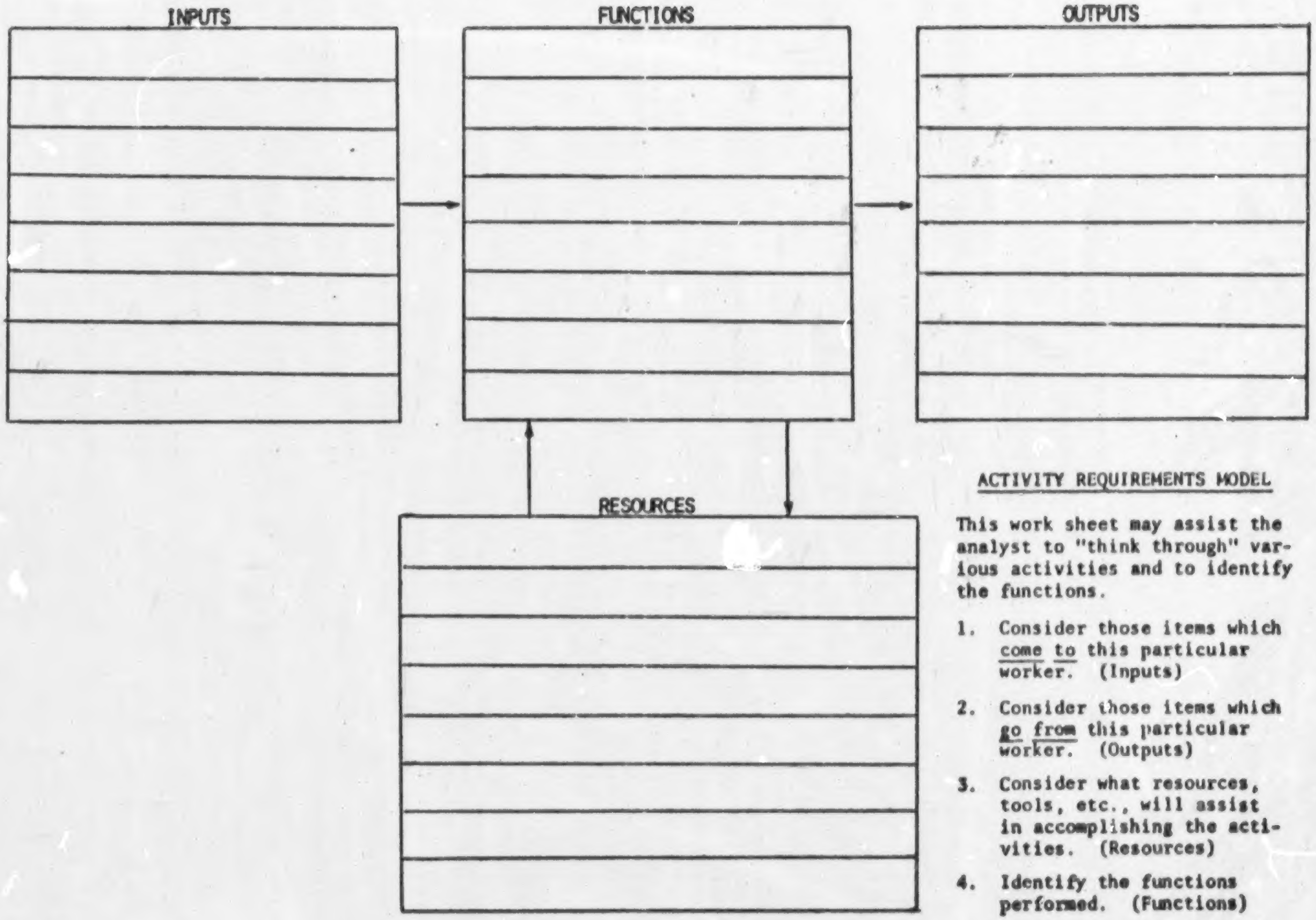
Silvern, in 1965, introduced the term anasynthesis for this process. A process of clearly defined steps which are applied to any problem.

Silvern indicates some problems of definition, uses, etc., by educators using the process.

He indicates "there is an intrinsic conflict in an individual who excells at analysis and who is then assigned problems in synthesis.

He goes on to indicate that "human minds and thinking characteristics tend to fall into three main categories:

☒ VERY HIGH ▥ HIGH ⧄ MEDIUM ⊡ LOW ☑ NONE	MANPOWER													
	GEOGRAPHIC AREAS													
	A				B				C					
CAPABILITIES														
ANALYSIS														
OBJECTIVE WRITING														
LEARNING THEORY														
INTERVIEWING INDUSTRY														
MANAGING PROJECT														
INTERESTS ANALYSIS														
OBJECTIVE WRITING														
LEARNING THEORY														
INTERVIEWING INDUSTRY														
MANAGING PROJECT														
AVAILABILITY FALL, 1972														
WINTER, 1972														



ACTIVITY REQUIREMENTS MODEL

This work sheet may assist the analyst to "think through" various activities and to identify the functions.

1. Consider those items which come to this particular worker. (Inputs)
2. Consider those items which go from this particular worker. (Outputs)
3. Consider what resources, tools, etc., will assist in accomplishing the activities. (Resources)
4. Identify the functions performed. (Functions)

WORK FORM VIS 2.0-5 1-10-68

FUNCTION ANALYSIS FORM	VOCATIONAL INSTRUCTIONAL SYSTEM (VIS) Level I Function____________________ No.__________ Analyst__________________ Date______ Date Rev.________	DIVISION OF VOCATIONAL EDUCATION STATE OF WASHINGTON

NO./FUNCTION	DEFINITION	RATIONALE
	TASKS	**OBJECTIVES**
		Program/Technology__________________________ Page_____

Form VIS-2.3.0 Rev. 10-7-70

PROGRAM OR PROJECT NAME:

CODE

DATE:

AGENCY ACTION ☐ **Approved** ☐ **Not Approved** ☐ **Returned for modification (Explanation attached)**

Date

Supersedes copy dated

OBJECTIVE (RESULTS EXPECTED):

AGENCY

DIVISION

PROGRAM/PROJECT DIRECTOR

Budget $

Planned Completion Date

Source of Funds			Obj of Exp	
App	Purp	Amount	Obj	Amount
			01	
			02	
			03	
			04	
			05	
			06	
			07	
			08	

Progress Reporting Date

Executive Officer

Project or Item No.	Steps or Courses of Action Needed to Achieve the Objective	Person Responsible	Planned Performance				Actual Performance			Account Dispo.*	
			Schedule		Budget Request	Obj #	Completion Date	Expenditures	Variance, Reasons & Correction Plan	Code	Auth Sign
			Start	Finish							

Page of

COMMENTS

ACCOUNT DISPOSITION CODE:*

A - Establish
M - Modify
S - Suspend

DISTRIBUTION

White	- Program Planning
Green	- Program Administration
Yellow	- Reference
Blue	- Each person named, program/project director's supervisor, executive officer's secretary

State of Washington

PROGRAM PLAN FORM
70-1

Date: ____________

PLAN	SCHEDULE											
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June

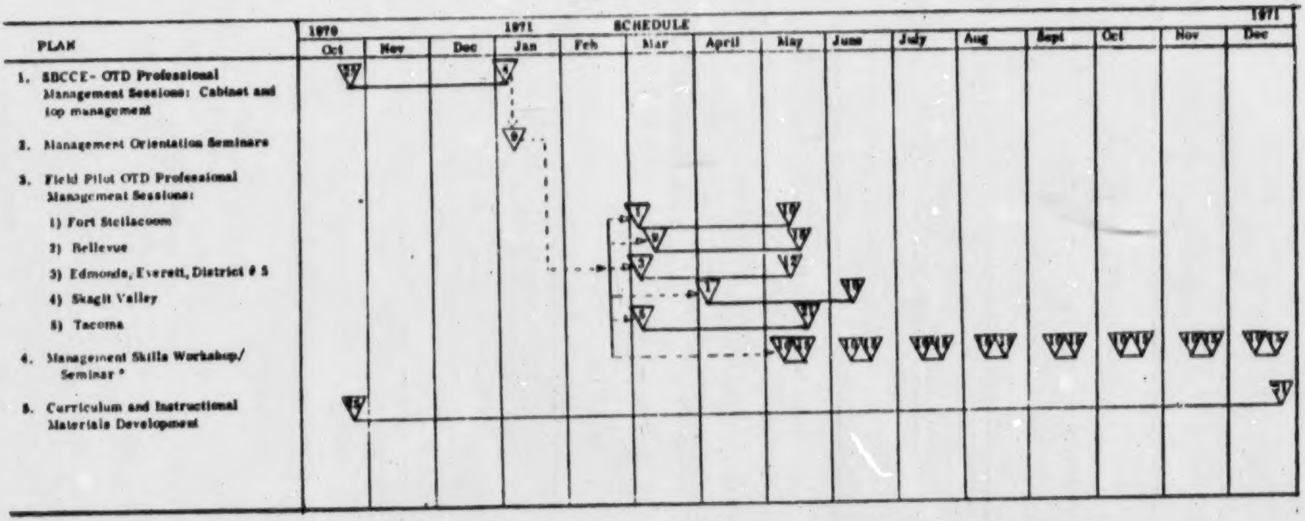
NOTES:

State of Washington - State Board for Community College Education

EDUCATION MANAGEMENT DEVELOPMENT PORGRAM

Proposed Plan and Schedule

Date: April 26, 1971



Notes: Total effort planned and scheduled, funded through December, 1971, with total funding by CCOE.

Proposal for 5-year financial grant currently being developed and is to be submitted and funded by September, 1971.

* Tentative schedule

Legend: ▽ Start and completion dates

- - - - Interfacing or supporting activities

THE VOCATIONAL INSTRUCTIONAL SYSTEM (VIS)

Function Diagram Level____

Program/Technology________________________ Page________

Prepared by________________________ Date________

Agency or Company

DIVISION OF VOCATIONAL EDUCATION

STATE OF WASHINGTON

Form VIS 2.4.0-A Rev. 2-12-68

a. Analysts - can examine a whole and break it down

b. Synthesists - can create unknown wholes by building up discrete and often unrelated parts; and (I think, perhaps with somewhat tongue in check)

c. Knuckleheads.

He illustrates some interesting results from groups he has taught systems concepts. Systems techniques taught as "subject matter" produce pat or stereotyped solutions to familiar complex problems and systems techniques learned intensively in a workshop or problem-solving laboratory environment produce far better solutions than when learned leisurely in a typical college classroom setting."

He makes another point in that those who have been exposed to "organizational chart thinking" tend to resist dynamic flow chart modeling or mix both types and confuse themselves.

If these statements reflect actual conditions then:

1. We have problems when educators deal with systems, and

2. The best way for them to learn is not in school but in actively working the process on real problems.

Silvern says, (Educational Technology, February, 1972), "The courses do not instruct general systems but do operationalize principles of systems engineering which are useful to the educational administration."

SUMMARY

When we view the curriculum problems and we view the various management models, we find that what we are dealing with are systems.

We need the ability to:

Maintain an attitude of service to the consumer

Effectively --

Plan

Organize

Control

Through Leadership

Document progress

Use systems approach

Use dynamic structures

Use the latest "tools" and "techniques."

If administrators of education learn and use the concept of:

- determining a personal and institutional philosophy
- determining long range goals
- determining short range goals
- defining specific objectives (and results quantifiable - what - when - how much) (both institutional and individual)
- developing a systematic comparison of the benefits and costs; of determining alternative objectives and establishing priorities for goal achievement
- analyzing alternative means to accomplish the objectives
- selecting the "best alternative" in terms of costs/benefits and effects on all related conditions
- allocating resources in the most efficient manner
- utilizing systems approach in the administration of educational programs
- evaluating the results in terms of the goals, objectives and other factors
- performing the functions of a "change agent"

- iteration at any point to correct any errors or to take care of changes in conditions, results of evaluations, etc.

they will be able to cope with both the managing of education and providing the leadership needed to develop appropriate curriculum.

CURRICULUM RESEARCH

FEDERAL PERSPECTIVES ON R&D IN VOCATIONAL EDUCATION

by

Howard F. Hjelm*

I am to speak on Federal Perspectives on Research and Development (R&D) in Vocational Education. First of all, it needs to be established as to whether or not R&D in vocational education is a national priority.

"American education is in urgent need of reform. ...As the first step toward reform, we need a coherent approach to research and experimentation." So spoke President Richard Nixon (1970) in his "Message on Education Reform" to the Congress of the United States on March 3, 1970. This message called for an expanded educational R&D program as essential for the reform and improvement of American education. He called for the establishment of the Experimental Schools Program and for the establishment of the National Institute of Education. Both of these goals have been met. The present administration has been and is committed to the support of educational R&D as a national priority.

President Nixon (1972) also said, "Career Education is another area of major new emphasis, an emphasis which grows out of my belief that our schools should be doing more to build self-reliance and self-sufficiency, to prepare students for a productive and fulfilling life. ...Career Education provides people of all ages with broader exposure to and better preparation for the world of work." The President said this in his State of the Union Message to the Congress of the United States on the 20th of January 1972. This clearly establishes career education as a White House priority. And vocational education is certainly a key component of career education.

Educational R&D and career education are both clearly priorities of the current administration. This definitely establishes R&D in vocational education as a national priority and places it in an extremely favored position.

A number of important issues impact on the Federal management of the funding of R&D. I have identified three such issues or perspectives for consideration for today. They are

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(1) the fundamental difference between science and technology, (2) field initiated and directed approaches to the proposal input system, and (3) long-range planning or programing of R&D.

One key issue that arises in the Federal perspective on the management of the funding of R&D is the distinction between science and technology. Science is that process that adds to our theoretical knowledge base in attempting to explain phenomena. Science is the basic research component of the R&D enterprise. Technology, on the other hand, is the application of science in seeking solutions to real live problems. Technology is development and its associated activities, the applied science component of the R&D enterprise. The feeling is that technology requires a directive approach in its management and science requires a nondirective approach in its management.

The Committee on Science and Astronautics (1970) of the U.S. House of Representatives reported that Dr. Lee A. DuBridge, a former presidential science advisor, in testifying before its Subcommittee on Science, Research, and Development, pointed out that differing problems exist in the Federal management of science and of technology. Dr. DuBridge stated, "We manage technology but we do not manage science. Or to put it another way: we must manage the process of technology; but we manage only the support of science. In technology we manage people; in the support of science, we only manage money." In a further statement on the issue in an interview with a reporter from the Christian Science Monitor, Dr. DuBridge (1970) stated, "But I don't think the management of science is the real problem. In fact quite the reverse. Science can only be done by scientists, and the fewer instructions from above, the better science they will do. Scientists need support more than directives. Only the scientific world can determine what frontiers it is feasible to attack, what critical problems should be examined, where research should be centered and how pursued. That holds for basic research. Now when you come to applied science that is different. That should be managed. It is devoted to a goal which should be clear and coordinated."

The National Science Foundation, in an effort to direct some of its resources to applied science, was advised in a report by the National Academy of Engineering (1970) to use a bottom up approach in the management of basic research and a top down approach in the management of its applied thrusts. The report recommended that their funding of basic research should be in response to field initiated proposals on problems identified by the scientists. Their funding of applied science should be a result of the Federal Government identifying the problems and the field submitting proposals in response to these nationally stated goals and guidelines.

It is obvious that the dollar resources needed to carry out development are much greater relative to that required to carry out basic research. Scholars, in a National Academy of Science report (1965), have recommended that about 10 percent of the R&D resources should be allocated to basic research and the remainder to the applied side of the ledger. Others have given similar estimates, approximating that of 10 percent. It should be pointed out that it is extremely difficult in the planning process to preserve an adequate base of support for basic research, even 10 percent, when the fiscal resources are not sufficient to meet the needs in the applied areas.

A second issue that arises in the Federal perspective on the management of the funding of R&D is that of the proportion of the funds to be allocated to projects directed at nationally identified priorities and goals compared to the proportion of funds to be reserved for responding to field initiated ideas coming from the grassroots of the R&D establishment. It is clear that the expressed needs for development are such that a limited number of problems must be identified to the relative exclusion of others, if sufficient resources of a critical mass are going to be directed to the highest priorities. It is the old problem of the allocation of scarce resources when the needs exceed the resources available. This establishing priorities and targeting larger amounts of funds against them results in fewer dollars being made available for a broad range of field initiated R&D. Thus, even though annually increased resources are being allocated to R&D in the social sciences, including education, the appearance to many scientists and developers in the field is that the resources are becoming less, instead of greater.

It is extremely difficult in the planning and budgeting processes to reserve funds for field initiated projects, given the pressing applied needs and the relatively limited resources in relation to the magnitude of the needs. However, vocational education R&D is in an extremely favored position in regard to the amount of funds reserved for field initiated projects. One-half of the Part C Research funds and one-half of the Part D Exemplary Project funds of the Vocational Education Act are given as formula grants to the States for their administration. This in effect provides a substantial base of support for field initiated activities to serve State and local needs. In addition, a small portion of the monies administered at the Federal level should be reserved for field initiated projects having national or regional significance.

A third issue that arises in the Federal perspective on the management of the funding of R&D is in regard to the long-range programing of R&D to meet specified applied needs. There are illustrative cases of the linear model of R&D whereby findings in basic research have led to applied research activities and ultimately to its direct application or to the development of specific programs. However, this is probably not the typical sequence of events. Development activities usually are planned from a felt need or a problem demanding a solution. In the course of events while carrying out the development activity, the developers search back in the literature for research findings of relevance to their particular needs, or they even may commission the carrying out of research projects to seek information on particular questions. In still another way, science makes its input into the world of development through the utilization of scientists as consultants on development efforts. The scientists are thus, as individuals, able to make a significant contribution by adding their insights and knowledge to development programs through advising the developers. The interactions and interfacings between science and development may follow different models. Science feeds technology and technology feeds science. Both are important and both need to be nurtured and supported.

Although one can identify successful examples illustrating the linear model of specific basic research findings leading to development leading to demonstration leading to utilization and adoption, I believe it has been rejected as a major model upon which to plan a national R&D program. However, the structured linear relationship of following planned development thrusts with planned demonstration efforts followed by planned installation and utilization efforts does appear to have some validity. Of course, the development efforts, the demonstration efforts, and the installation efforts should all contain rigorous summative evaluation components to aid in the decision of whether or not to move to the next stage. In addition, the development efforts, the demonstration efforts, and the installation efforts should all be undergirded by a scientifically rigorous critical mass of decision-oriented research. It should be understood that this linear development model is not the only planning model for R&D and that any comprehensive R&D planning model should take into account other models.

In the administration of vocational, occupational, and technical education, we are in an excellent position to utilize the different R&D funding authorities to plan a linear, long-range effort of development efforts followed by demonstration efforts followed by installation efforts. Part C Research funds and Part I Curriculum Development funds of the Vocational Education Act can be utilized to support planned development efforts targeted on national priorities. The resources of Part D Exemplary Projects of the Vocational Education Act and Model Programs of the new Occupational Education Title can be utilized to follow through with extensive demonstrations of the products of these development efforts. The Model Programs of the Occupational Education Title, as well as OE's proposed Career Education Installation Program under Cooperative Research authority, can be utilized for broad-scale installation and utilization of products and programs that have been developed and demonstrated. The Part C Research funds can be utilized to carry out the decision-oriented research that is needed to conduct high quality development, demonstration, and installation efforts. The State's portions of Part C Research and Part D Exemplary Project funds could also be used to supplement all phases of the nationally planned strategies, as well as experimentation of various types to meet State and local needs.

The sources of resources for the development phases of planned national strategies do not need to be limited to those projects funded by the Part C Research and Part I Curriculum Development authorizations. Planned development efforts being supported by other funding authorities could be programed to feed their developed products into the demonstrations supported by the Part D Exemplary Projects and the Model Programs. For example, the Bureau of Education for the Handicapped could develop instructional materials and programs for the vocational training of handicapped individuals. The products of such efforts could then be systematically demonstrated in the Part D Exemplary Projects and the Model Programs in Occupational Education.

It is interesting to note that the legislation establishing the National Institute of Education (NIE) identifies only one subject area in education and that is career education. The law states that the Institute shall seek to improve education, including career education, in the United States. One of the major directed R&D thrusts in NIE is that of the career education models--the school-based model, the employer-based model, the home-community model, and the rural-residential model. OE does plan to systematically demonstrate the products from these models in the Exemplary Projects funded with Part D funds.

We do look forward to close working and planning relationships between NIE and OE in the directed R&D efforts in vocational education. At the present time, the communication between OE and the Career Education Task Force in NIE is excellent.

The Education Amendments of 1972 clearly establish the National Institute of Education as the Federal agency responsible for building an effective educational research and development system. Building such a system includes the support for basic research, the training of researchers, the dissemination of research and development information, and the establishment of research centers and laboratories. We in the Office of Education look to the National Institute of Education for leadership in this area. As the Institute builds a total educational R&D system, it should be comprehensive, and vocational education R&D should be an integral part of it. The Institute is providing support for the ERIC Clearinghouse on Vocational and Technical Education, for the Ohio and North Carolina R&D centers in vocational, occupational, and technical education, for the training of researchers, and for basic research of relevance to vocational education. OE does not plan to duplicate such efforts.

The Committee on Intergovernmental Science Relations (1972) in its recent report to the Federal Council for Science and Technology entitled Public Technology: A Tool for Solving National Problems has called for a greater partnership between the Federal Government and the State and local governments in the R&D enterprise. The Committee reports that the Nation has reached a consensus on the desirability of placing greater responsibility at the lower levels of government in our Federal system. The Committee feels that great improvements in the relevancy of R&D and in its utilization would result if the State and local governments were more actively involved in the total process. At the present time, State and local governments spend one penny for R&D for every dollar spent by the Federal Government.

The Vocational Education Act, in its legislation for Part C Research and Part D Exemplary Projects, provides for a real Federal-State relationship in the administration of vocational education R&D. One-half of the Part C Research funds and one-half of the Part D Exemplary Project funds are granted on a formula basis to the States for their administration. In addition, the remaining halves of Part C Research and Part D Exemplary Project funds have geographical spread formulae built into them with the Part C proposals from local education agencies requiring approval by the State Boards if they are to be funded by OE and all the Part D proposals being reviewed by the State Boards with them having disapproval authority. All proposals for Model Programs under the Occupational Education Title are also to be reviewed by the appropriate State agencies with funding preferences given to those approved by the State agencies. Thus, vocational education research has a built in legal mechanism for the sharing of responsibilities between the Federal Government and the State governments. This is a plus for vocational education research and we should build on it. It is truly a Federal-State cooperative arrangement.

The report of the Committee on Intergovernmental Science Relations (1972) calls for the Federal Government to assist State and local governments in establishing mechanisms for the development and coordination of science and technology programs. Doesn't this sound like the Research Coordinating Units? The RCUs were initiated under the leadership of OE in 1965 and were written into the Vocational Education Amendments of 1968. OE sees the RCUs as a keystone in the vocational educational R&D world. We plan to do everything we can to enhance their role and to increase their communication and involvement with OE's management of R&D in vocational education.

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PLANS AND PRIORITIES FOR CURRICULUM DEVELOPMENT

OCCUPATIONAL AND ADULT EDUCATION: PRIORITIES AND CHALLENGES

by
William F. Pierce*

It is my distinct pleasure to meet with you during this third in a series of three regional seminars for Curriculum Development Personnel. I trust that this has proven itself a week in which you have gained new insights and inspiration for your significant role and responsibilities. And, the role of the curriculum specialist is a significant one in today's educational system. As curriculum specialists in Vocational-Technical and Career Education, you are concerned with educational objectives, program content, teaching strategies and learning experiences, teaching aids, and evaluation -- which is to say, you are concerned with the total educational process and its means. As vocational educators, your efforts are central to career education -- in making the career education concept work! Since that concept is one of the top priorities of both the Office of Education and The National Institute of Education, your efforts are of paramount importance to a great many people. And whether you know it or not, you're being watched very closely.

As you may know, prior to joining the Office of Education, I spent over 8 years with the Michigan State Department of Education. One of the fringe benefits of living in Michigan was the opportunity to occasionally escape from my duties and responsibilities by taking my family to the Michigan wilderness for a little fishing and camping.

On one of these trips I encountered a crusty old gentleman, a true son of Michigan's winter-water wonderland who told me a story which I think would be of interest to those of you here this evening, and one which seems to say something about the need for career education. My old storyteller told of a famous Michigan guide whose outward appearance was one of a backwoodsman but whose manner was one of an urbane, well-educated person. It seems, according to my friend, that the guide had once been the president of a very large bank. As such he enjoyed all the trappings of success including stock-options, a chaufferred car and a rather splendid penthouse apartment.

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This apparent fulfillment of the "American Dream" came to an abrupt end one day when the man visited his doctor. He was told that he had only six months to live, and, the doctor added, he was telling him this because he knew that he had some money and believed that he should spend the remaining time enjoying himself and doing something that he'd always wanted to do.

The banker returned to his office, tendered his resignation and walked out of that bank. He then drove up to northern Michigan, purchased a fine piece of property and prepared to spend his final months enjoying a life style and occupation -- that of fisherman and backwoodsman -- for which he'd always longed. That, the storyteller concluded, was 17 years ago, and he, the storyteller, was that ex-banker. And what's more, he had never felt better in his life.

I suppose that there are many lessons and conclusions that you could draw from this story, but the one that struck me rather forcefully at the time -- and today, perhaps, strikes me even more forcefully as I try to think through the career education concept, is the relationship between work that is personally rewarding and productive and the good health and life-span of an individual.

While I, of course, realize that it is sometimes dangerous to generalize too much from a single incident, I recently found further and more scholarly documentation for my conclusion in the form of a newly-issued report from the Department of Health, Education and Welfare. This study, called "Work in America" is a weighty document which looks at work from a variety of viewpoints, and among its many conclusions is the following: dissatisfying work is linked to heart disease and other physical and mental health problems. The greatest single predictor of longevity is not whether or not one smokes or how often he sees a doctor but the extent to which one is satisfied with one's work.

While I am not suggesting that people take up smoking, stop seeing their doctor, or quit their job, I am trying to impress upon you the responsibilities which you and I share with regard to the health and well-being of the millions of young persons who are and who will be receiving an education in our schools.

Throughout his tenure with the Office Of Education, Assistant Secretary Marland has concentrated his own efforts and that of the agency's on the promotion of Career Education, a concept aimed at helping all Americans find satisfying work. Consequently, a satisfying life. Since I am speaking towards the end of this four and one-half day program, I am going to resist the temptation to join my predecessors in offering a definition of Career Education. Rather, I would like to take the time allotted me to discuss with you very briefly three things.

First, some of my personal goals and objectives for the new Bureau of Occupational and Adult Education and how these might relate to some new or additional efforts by curriculum specialists.

Second, a kind of laundry list of problems which, in my opinion, infringe upon the business of curriculum development and management.

Third and finally, I'd like to share with you a personal bias to which I think we in education, and particularly those of you who are curriculum specialists, should be addressing ourselves.

As I said, I would like first to share with you my perception of the tasks of the new deputyship and how you might be of assistance.

These tasks are:

1. Utilizing the career education concept, attempt to convey to the American public how unrealistic are the expectations that far too many have about a college degree.
2. Again utilizing the career education concept, convince educational administrators everywhere, and at every level, of the absolutely essential importance that academic and vocational education hold one for the other.

In his State of the Union Address, almost a year ago, President Nixon said, with reference to drop-outs and disenchanted adult employees:

> "One reason for this situation is the inflexibility of our educational system, including the fact that it so rigidly separates academic and vocational curricula. Too often vocational education is foolishly stigmatized as being less desirable than academic preparation. And too often the academic curriculum offers very little preparation for viable careers. Most students are unable to combine the most valuable features of both vocational and academic education; once they have chosen one curriculum, it is difficult to move to the other."

The challenges to the curriculum specialist are obvious!

3. Maximize career development opportunities for all children from kindergarten on.

I think it would be an accurate statement to say that every state currently has curriculum development activities underway which relate to this objective. One of the fascinating things is the variety of models that are being developed. This would seem desirable at this stage in the development of career education.

4. Maximize not only the availability of vocational education programs for all secondary students but optimize both vocational and academic skill training alternatives. We must utilize all segments of our environment for educational purposes when such utilization is appropriate. We must take full advantage of all the alternative delivery systems available to us.

Let me expand on that last statement. Obviously the school is a major delivery system for education. But there are others -- and, curriculum developers in vocational-technical education have, for the most part, ignored these alternatives. In particular, there is need for curricula developed in a mode for the home-based educational programs that modern technology has made possible. In the Washington Post of January 6, 1973, John M. King advocated learning centers for the home. He suggested three types of centers, one a simple basic unit and the other two of greater sophistication. Featured would be such media as radio, TV, records, reel-to-reel tapes, tape cassettes, video tapes, film, printed materials and eventually, a combination of CATV, computer terminal, and telephone for home instruction. These things are coming. Curriculum developers had better take note and take action!

5. Increase the secondary vocational enrollment to a more realistic percentage.

One very obvious way to accomplish that is to develop vocational education curricula which not only "turns kids on" but which turns on the employer as a result of the usability of the curriculum content.

6. Increase the post-secondary technical enrollments in all community colleges to a more realistic and acceptable percentage.

A developing problem has to do with the lack of secondary-post-secondary articulation in fields of occupational preparation. As high school vocational education programs become more sophisticated, a response must be made by the post-secondary institution. A request for proposals will soon be issued by the Office of Education through the curriculum branch for identification of the articulation problems and the development of guidelines for dealing with these.

7. Provide special emphasis for increased funding at the post-secondary level.

We are very aware of the special emphasis Congress has placed on the initiation, expansion, and especially the upgrading of post-secondary occupational education in community and junior colleges. Congress felt people with broad experience in occupational education at the community and junior college level were not represented in the old bureau. They shall be in the new. And one of their responsibilities will be to see to it that community colleges are appropriately represented in all policy and funding decisions of the bureau.

8. Re-emphasize our vocational and academic efforts for our poorly served minority citizens.

Just a week ago, the Office of Education co-sponsored a National Conference on Career Education and its implications for minorities. Representative Shirley Chisholm attacked career education becuase a recommended strategy, perhaps developed by a curriculum specialist, suggested one way to make elementary kids aware of the world of work is to ask them to describe the work of their father or mother or other members of their family.

As Representative Chisholm pointed out, in many families of minority children, the father is unemployed and effectively kept from meaningful employment while the mother is on ADC. That particularly suggested curricular strategy therefore set up another situation which further damaged the self concept of the children so effected. That certainly is not the intent of Career Education and that certainly should not be the result of a curriculum strategy developed by any of us. We as educators and curriculum specialists must become sensitive to that sort of issue and we must renew our efforts to develop techniques which are appropriate for our minority youngsters.

9. Maximize the use of private, post-secondary institutions. There is need for considerable curriculum development for the post-secondary level in relation to emerging technologies. Four areas being addressed by ongoing curriculum efforts under Part I are: Electro-Mechanical Technology, Bio-Medical Technology, Electro-Optical Technology, and Nuclear-Medical Technology. Already 50 schools have initiated programs in Electro-Mechanical Technology as a result of the Curriculum Development Project.

10. Provide better coordination between all manpower programs so we can assure ourselves of the greatest efficiency possible in both expenditure of funds and service to people.

There is a great deal that has been learned in the manpower programs that is useful to the vocational educator, and, vice-versa. There is need for curriculum people in manpower and vocational education to get together and pool their knowledge and resources.

11. Make a special effort to maximize the training opportunities and alternatives for adults. In my opinion, we have done an exceedingly poor job of providing supplemental and upgrading skills to adults who are not yet out of work but who are not performing at their maximum capacity and, therefore, have reached their maximum earning potential.

Here is where a home-based educational system can come to the fore. Harold Clark, professor of Educational Economics at Columbia University, has said, "We are in the early stages of a technological world that is going to require essentially all people to have to go to school continually to stay abreast of the changes."[1] In "Here Comes Tomorrow," the staff of the Wall Street Journal state:

> "This educational updating process, which will be carried on at work and in the home, often by electronic means, as well as in formal classrooms, is part of the explanation for the anticipated increase in adult education."[2]

12. Provide special emphasis to two groups of adults:
    a. The returning Viet Nam era veterans,
    b. The elderly disenfranchised.

Again, the objective poses challenges to the curriculum developer. Personnel in our curriculum development branch inform me that they have had some expressions of interest in curriculum development dealing with both problems.

13. Maximize the expansion and utilization of counselors and guidance personnel at all levels. I am very aware that the writers of the House report on the Education Amendments of 1972 used testimony provided by the American Personnel and Guidance Association to prove that the nation's schools are falling far short

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[1] Quoted in "Here Comes Tomorrow" by the staff of the Wall Street Journal, Dow Jones Books, Princeton, New Jersey, 1957, p. 154.

[2] Ibid., p. 154.

of attaining Congress's goal that the preparation of students for earning a living is an integral part of the school's program. I think it is significant that the APGA has become a spokesman for Occupational and Adult Education. I am also very aware that the National Advisory Council's Sixth Report is devoted exclusively to counseling and guidance. And, as you know, Congress stipulated that at least one of the seven legislated grade 16 positions in the new bureau should be filled by someone having experience in Occupational Guidance and Counseling. Consequently, one of the observable activities of this deputyship will deal with the expansion and promotion of the role of counseling and guidance personnel at all levels.

Now, I realize that is a pretty long, rather diverse list of tasks. But, they represent what I perceive should be our priority tasks and objectives. Most of them have implications for curriculum development and pose challenges to the curriculum specialists.

Now for the laundry list which we won't have time to develop or discuss but which I'd like to surface at this time for, hopefully, future consideration and discussion.

1. There is no comprehensive state-of-the-art study of curriculum development in Vocational-Technical and Career Education.
2. Much of the work in curriculum development that is in progress tends to be spotty and uncoordinated. In other words, there is much duplication in some areas whereas others receive virtually no attention. Also, there is a tendency to give less attention to those that do not fit easily into traditional vocational education categories.
3. Although things are beginning to change somewhat, there is still too little implementation of the career education concept in curriculum efforts. Many of the developing efforts seem tied to a rather rigid definition of career education such as the world of work concept.
4. Little attention has been given to the relative effectiveness of the various procedures and products of curriculum development in Vocational-Technical Education and in Career Education.
5. Many curriculum materials in use have not been validated through rigorous testing.
6. In general, curriculum development does not reflect the continued advances that are being made in educational media and technology.
7. There are vast unmet curriculum needs of special groups, especially the disadvantaged.
8. Frequently, a major weakness has been the failure to disseminate and provide for effective use of curriculum materials.

9. Increasing geographical mobility of persons in the labor force seems to indicate the necessity for emphasis on standardization of certain types of curricular content, but, among some educators, there is still a feeling that all curriculum development must be done at the local level.

10. There is no provision for a systematic and continuous review and updating of curricula.

In a sense I guess, all of these reflect a bias. Some however, can be substantiated more than others. I'd now like to discuss with you what is becoming increasingly my major bias regarding curriculum development. This is the failure of teachers to effectively utilize curriculum materials once they've been developed.

As you all know, it is possible to design the most effective, innovative type of curriculum imaginable, but if that curriculum fails to reach the kids in the classroom then we have simply wasted your time, energy and money on a fruitless endeavor. In my opinion, this type of thing happens much more frequently than it should. Particularly at the elementary level.

The reason, I believe, is that teachers are still ill-prepared to use pre-developed curriculum materials. It is not therefore because they do not want to but because they do not know how.

The scenario seems to go something like this! An elementary teacher decides to introduce some career education elements into the teaching strategy, and the first inclination is to look for already existing materials. In the search for these materials, it might end up with a compendium of existing programs, each of which is briefly described and each of which generally lacks any type of evaluative remarks.

After poring through this morass of information, the decision might be to either do further research or take another route and develop -- personally -- a curriculum which it is believed will work with these kids in this particular classroom.

As a result, we have teachers all over the country developing their own curriculum materials -- materials which they rarely change once established. Materials which are not very original, not often very well planned and generally inferior to pre-developed materials. These "home made" materials have one distinct advantage -- one all others generally do not -- the teachers will use them!

I realize these comments sound like a stark indictment of current educational methods. I do not wish them to be construed as such. Nor do I wish to demean the quality of the work of curriculum specialists and teachers. Instead, I seek just the opposite -- to challenge your creativity even more. The question that I raise with you this evening is this: Is it not time to start directing some of our efforts in another direction — toward changing the type of education that our teacher training institutions are offering?

I personally am convinced that most college and universities are not providing the kind of preservice preparation that teachers need and deserve. As a result, you do excellent work which far too often goes unused and unappreciated. As good as those materials are, if they don't do what they were originally intended to do -- bring about significant changes in the children, youth and adults in the classroom -- then I contend we're wasting a lot of money on curriculum development.

The danger of stating a bias as I've just done is that one is forced to generalize. There are obviously example after example of teachers using materials appropriately and as many examples of high quality materials which have been developed by the individual teacher.

A great deal of the classroom activity for elementary-level career education has come from the initiative and imagination of individual teachers. Some interesting things have been happening all around the country. I contend however, that those examples represent the exception rather than the rule.

Ladies and Gentlemen, I have done the three things I set out to do.

In summary therefore, let me suggest a couple of courses of action.

First, I solicit your help in achieving the tasks I've outlined for the new Bureau.

Second, I ask you to consider the laundry list and in-so-far as my perceptions are accurate I suggest you try to develop procedures or proposals to overcome those problems.

Third, prove me wrong if my bias is indeed an incorrect one. If, on the other hand, it proves correct, you have, it seems to me, as professional curriculum specialists, a responsibility to come up with a way to change the typical operational pattern of the average teacher.

Thank you for inviting me and I wish you well as you continue your deliberations this week.